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ABSTRACT

This paper outlines the rationale, goals, planning, methodology, problems, and future direction of the research program involving studies concerning education and employment carried out by the International Institute for Educational Planning. The project was designed to relate the development of higher education in various countries (both developing and developed) to the changing needs of the labor market in order to improve educational planning in those countries and reduce the possibility of mismatch between the training offered and the skills in demand. The project goals--which include socioeconomic analyses, comparison of employers' needs and graduates' skills, and better planning for higher education--are realized both in case studies in various countries and in the analysis of specific issues. The research teams in each country chose from three methods: longitudial studies of students, graduates, and employers (the three categories sampled); analyses of census data; and analyses of representative populations. Major variables include economic capacities of nations, degrees of emphasis on education, inventories of training needs, education costs, and such factors as job mobility and attitudes of students and employers. Sample populations were surveyed through questionnaires and their answers correlated with national statistics. Discussion of problems and limitations of methods and samples resulted in 1979 in a refocusing on educational issues as well as on wider coverage of schools (technical-vocational institutions as well as universities) and on an emphasis on followup studies. (JW)

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IIEP occasional papers

62

Higher education and employment : some aspects of the IIEP Research Project

Bikas C. Sanyal

EA 015 844

Unesco: International Institute for Educational Planning

IIEP Occasional Papers No. 62

HIGHER EDUCATION AND EMPLOYMENT : SOME ASPECTS OF THE IIEP RESEARCH PROJECT

Bikas C. Sanyal

Unesco: International Institute for
Educational Planning

IIEP Occasional Papers

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PREFACE

This paper outlines some aspects of the methodology followed in the research programme on Tracer Studies on Education and Employment carried out by IIEP under the direction of Bikas C. Sanyal. Due to the complex nature of the relationship between education and employment in general, and the differences among the various countries in respect of the operation of the education system on the one hand and the labour market on the other, there is no unique methodology which could be applied uniformly to all countries.

The present paper gives some ideas on the conceptual framework of the research, broad outlines of the methodologies used in the various studies, and the organization of the research. The details of each aspect are worked out in co-operation with the research team of each country in which a study is conducted. We hope that this presentation of the programme will be useful to the reader, especially those who are studying similar planning problems.

We are pleased to express our gratitude tc the Donor Agencies who have supported this research programme, in particular SIDA (Sweden), NORAD (Norway), CIDA (Canada) and BMZ (Federal Republic of Germany), through their voluntary contributions to the IIEP.

Michel Debeauvais
Director

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HIGHER EDUCATION AND EMPLOYMENT

- SOME ASPECTS OF THE IIEP RESEARCH PROJECT -

by

Bikas C. Sanyal

The present paper deals with the rationale of the project, the methodology adopted, the organization of the research, its contribution (1), the problems encountered in achieving the objectives, the transition of the project's scope and methodology from the IIEP's last medium-term plan to the present medium term plan, i.e. from higher education and employment to education, work and employment.

1. The rationale of the project:

Research on the relationship between education and employment in the recent years has been based on four different and more or less conflicting points of view in four schools of thought (2). First among them is the view that education provides people with skills to develop and manage the economy and the related services and, therefore, investment in education is supposed to be an investment in human capital implying investment in the productive capacity of the people (3). The second view is that education not only provides skills for performing different vocational tasks, it also disseminates social values, in promoting upward mobility in the society and that education acts as a screening device to select the ablest people for the best jobs (4). The third view is that productivity is an attibute of a job and not of a person. People are matched to jobs by criteria which may be associated to education but education is not a determinant of productivity (5). This theory has been termed as the labour-market segmentation theory. The fourth view which is related to the third one is that the idea of correspondence between education and employment is an illusion existing only in the minds of school-leavers, and has little to do with performance on the job. The usual practice of recruiting school leavers for certain jobs according to certain educational qualifications leads new job-seekers to believe that they are entitled to types of jobs (6).

The above four schools of thought can, in fact, be grouped into two categories. The first two schools of thought believe in the contribution of education to the social and economic development of the people. The second two schools of thought raise doubts in the role of education in such development. To the potential users of these views or theories, especially

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(1) A synthesis of the findings will be dealt with in a separate paper: by G. Psacharapoulos and B.C. Sanyal.

in the context of a developing country, problems of analysis are crucial. Some of these problems have been elaborated elsewhere (7), (8). Whatever might be coming out of the different schools of thought, educational activities, in particular, at the third level, have been expanding rapidly during the last two decades.

Enrolment in third-level education in developing countries has increased fourfold during the period 1960 - 75. This increase in enrolment has also led to an increase in the number of graduates from institutions of higher education. Three factors may be identified as being responsible for the rapid expansion of higher education; first among them is the economic factor. In most developing countries, the policy behind the development of higher education was to supply the economy as rapidly as possible with the educated manpower necessary to eliminate human resource "bottlenecks" in expanding sectors. Many of the countries, having secured political independence during the last three decades, sought in the national interest to replace the many expatriates holding high-level decision-making positions in a wide range of public and economic services. The vacuum created by their departure led to an increased demand for the output from secondary schools to become university graduates or receive some technical or sub-professional training. Therefore, emphasis had to be laid on the development of higher education.

At this stage, with demand exceeding supply and attention focussed on those types of higher education where graduates were in short supply, little thought was given to unemployment. The distribution of income and employment were implicitly thought to be probems that would be solved by rapid economic expansion and by the upward mobility of the poor through increased educational opportunities. At that time also, industrial development was favoured over agricultural development because agriculture appeared to be able to survive with unskilled labour, and because the planners and politicians thought that only dynamic industrial growth could absorb the masses of underemployed, especially in rural areas, and lead the economy into "take-off". It was also believed that this would sustain economic growth, increase consumption and improve the overall economic condition of the people. Economists were quick to argue that investment in human resources was a powerful factor for economic growth. The rates of return for such investment, although calculated very approximately and sometimes arbitrarily, showed that in terms of productivity the rate of

return on educational expenditures was as high as - if not higher than - the investments elsewhere. Thus, more and more money came to be invested in education with the institutions of higher education receiving a large share, a share justified by salary differentials that in turn were legitimized by educational differentials.

The reasons for expansion were also social and varied. For example, education for many of these countries has now come to be considered as a basic human right. Also, the communications system having improved, the benefits of higher education were more readily perceived. Once children had received some education, they understood the benefits and demanded more. Most of the institutions of higher education charged very low fees, while the special economic incentives, and prestige and power attached to the job obtained by graduates with higher education, attracted more and more students.

There were also political factors responsible for expansion in higher education. To all the countries, and to all the regions within a country, an institution of higher education was regarded as a symbol of national or regional prestige. Economic criteria played but a small role in the establishment of many of the institutions of higher education, and employability of the output often played no role at all.

The rapid expansion of higher education has created as many problems as it has solved. Principal among these are: (1) the lack of relevance of the content and structure of the system of higher education with respect to the national needs since in most of these countries the expansion was hardly combined with the consideration of changed needs due to political independence from the former colonial rulers; (2) lack of confidence on behalf of the key production sectors of the economy in the institutions of higher education, due to the absence of any interaction between the industries and the institutions of higher education; (3) rural exodus because of the location of these institutions in urban areas; (4) increase in expectations among the students which could not be met; and (5) most important, the mismatch in quantitative and qualitative terms between the output of the system and the absorptive capacity of the labour market. The latter has revealed itself in the problems of unemployment and underemployment among most of the university graduates, especially in the liberal arts. By contrast, in the professional fields, fewer graduates have been produced than were needed.

To be fair, the authorities of higher education have been partly handicapped by the problems of the operation of the employment market and its everchanging nature. It has been difficult for them to assess the absorptive capacity of the economy, due to difficulties in forecasting the manpower needs. The principal difficulties are lack of information on: (1) the resource potential of the country, (2) the changing technology and labour productivity, (3) educational needs for different kinds of jobs, (4) occupational mobility, (5) attitudes and expectations of the potential employees and employers, and (6) the recruitment and promotion practices of the employers. Even if such information were available, economic uncertainties would still prevail. However, these difficulties may be tackled only by making the system of higher education more flexible in order to cope with the changing economic priorities.

It is in this context that the International Institute for Educational Planning launched a research project to relate the development of higher education within a country with the changing needs of the employment market, in both quantitative and qualitative terms, so as to improve the basis for planning the development of higher education and to reduce the mismatch between the type of training offered by the institutions and the types of skills needed by the labour market.

It was believed that all the schools of thought mentioned above had some reasons and justification but none of them could fit into the situation prevailing in a particular country at a particular point in time. The approach followed by I.I.E.P. was, therefore, not to accept any of the above theories in the context of a developing country on which precise information about the actual operation of the socio-political structure is not known. The I.I.E.P. model has not accepted the capitalist theory of social operation as such as the basis of the human capital theory, nor will it accept the Marxian theory which is behind the segmentation approach nor the "diploma disease" theory where school-leavers are assumed to be incapable of finding the real correspondence between education and the job, but has put the actual operation of the education system and the labour market to test. To us it appears that all these theories are constantly under revision and it is extremely difficult to identify a country's social system precisely by its following a particular model of development. Whatever model for development a country accepts, it adopts the model according to its socio-economic-cultural environment. With these points of view in

mind, the I.I.E.P. project on higher education and employment during the last medium-term plan had the objective of providing a knowledge-base for formulating the educational policy oriented towards employment needs of the country. The immediate objectives were:

1. to identify the role played by the education system in general, and the higher education system in particular, in the overall socio-economic development of the country and, conversely, the influence that the social, cultural and economic factors have exerted in the development of the education system;
2. to identify the inconsistencies, both quantitative and qualitative, that have developed in the past in the education system and suggest measures to rectify them;
3. to throw light on the main variables to be considered in formulating policies of intake to different disciplines and institutions;
4. to identify the factors which intervene in the implementation of such policies and suggest some ways to minimize the effect of these factors;
5. to develop a system of indicators to be used by the national policy-makers, the university administrators, potential employers, and the students, for decision-making;
6. to create a data base for researchers in educational planning, particularly in the area of employment.

For the first five of the above objectives, an analysis of the quantitative aspects is not enough and the investigation has to consider the qualitative aspects such as expectations of students, graduates and employers, as well as quantitative aspects such as manpower needs, trends of output of the educational system, their intakes, structure of the labour force, etc.

2. Framework of the project

The phenomenon of interdependence between educational development and the overall socio-economic development of a country calls for an analysis of the resource potential in natural, physical and human categories. To develop each region in a balanced way, the development strategy of a country should take account of whatever natural resource potential is available in that region. The process of exploitation and the choice of technology will be determined inter alia by natural resource potential. The exploitation of these resources needs skills which must be provided by

the education system. The way in which natural resources are exploited, therefore, influences the educational development strategy in structure and content. It is also dependent on the available and potential physical resources such as building equipment, transportation and communication facilities. Development of these physical resources depends, in turn, on the development of education and vice versa. An analysis of physical resources potential therefore becomes an important task in ascertaining the role of education in the overall development strategy of a country.

In the analysis of the development of human resources, traditions, customs and beliefs cherished by the people cannot be ignored. Demographic changes influence the human resource potential as well. Education, for that matter, higher education, has to be planned in such a way as to develop this human resource potential in order to respond to the needs of the social and economic development of the country, while considering the expectations and attitudes of the people. An analysis of human resource development therefore becomes imperative in the overall analysis of the relationship between higher education and employment.

The conditions of work, recruitment and promotion policy of the employment market influence the type of qualification that an employee would have. The full employment policy, on the one hand, has to guarantee a job for every individual. In countries where this policy does not prevail, employment is an objective of the individual. Therefore, the development of human resources becomes dependent on the operation of the labour market and the prevailing employment policy. The policy of human resource development for economic and social needs, calls for an analysis of the skills needed for the various activities of the economy. The output of the education system, by type of skills taught, has to be known for proper utilization of the human resources it generates. Before the education system can be planned with respect to intake, content and structure, it is only logical that demands for such skills in quantitative terms be estimated beforehand to whatever extent possible. These estimates of demand, which traditionally have been called manpower demand, but in our conception are broader than that, because of the consideration of the qualitative aspects, are susceptible to inaccuracy due to economic uncertainties and the changing nature of the perceptions, attitudes and expectations of the different segments of the society. However, some guidance is needed as to the direction that the development of education in general, and higher

education in particular, should take in quantitative terms to cater for the future needs for skills so as to avoid unemployment or underemployment.

It is believed that these estimates, if properly prepared, can provide such guidance. These quantitative estimates of needs for skills can be checked with the actual values to identify the degree of inaccuracy and to form a checklist of missing parameters and variables. They are also useful for setting the foundation of the strategy for the development of the structure and organization of the education system.

It is assumed that where higher education is concerned the estimates are easier to make, because of the increased degree of correspondence between the skills imparted in the higher education system and the skills needed on the job, than for other levels of education. Having regard to the problems of estimating future needs for highly qualified manpower, an analysis of the matching between the quantity of trained people and the quality of the training content demanded by the economy and responsiveness of the institutions of higher education becomes particularly useful. This analysis of matching brings out the shortcomings of the education system not only quantitatively but also qualitatively. A careful diagnosis of the education system forms the basis of any future strategy for the higher education system and also provides a yardstick for achievements in restructuring the social system through change in the educational system, and illuminates the problems encountered in achieving the targets of socialization and equality of opportunities in the world of work. These problems may be seen in the various education "paths" of different population groups, which result in the different working opportunities in the labour market.

To identify the factors obstructing socialization and equality of opportunities requires a sociological analysis of the population, their perceptions, attitudes and expectations from the education system and from the labour market. This analysis must give details of such socio-economic characteristics as parental educational and income background, age, sex, region of home, type of school attended, etc.

An analysis of the problem of unemployment and underutilization of graduates in respect of the training received and the skills needed by the job can provide useful information for decision-making to improve the relationship between higher education and the world of work. This analysis would also involve a study of the process of employment and its effectiveness as perceived by the graduates and the employers.

An institutional mechanism for interaction among the students, their parents, the institutions of higher education, the graduates, the employers and the planners and decision-makers could also assist in improving such a relationship. A better match between the expectations and the admission policies of the institutions of higher education could result in better academic performance and better socialization. This could be achieved through the design of more rational selection criteria and a better counselling system.

A better match between the expectations and qualifications of graduates and the expectations and requirements of the employers could result in higher productivity, more job satisfaction, and less structural imbalance in highly qualified manpower with the adoption of better employment procedures and selection criteria.

For the employers, the variables to be considered would be size of the enterprise, type of production or services offered, location, employment process, selection criteria, salaries and other benefits including accommodation, etc. A matching system among the different segments of the society could be a useful tool to develop a "fine tuning" procedure for constant revision of the higher education system and the labour market which would be able to take into account the changing technology, re-ordering of developmental priorities, changing structure of the education system, and changing perceptions, attitudes and expectations of the different segments of the society.

An attempt has been made in this project to go into as much detail as possible in following the above conceptual framework in the same sequence as the discussion above. Such a research has to be interdisciplinary, involving economists, psychologists, sociologists, educationists and computer scientists. It also calls for an extensive data base, which will be discussed at a later stage.

It should, however, be noted that the problem of economic uncertainties, which are not only due to factors within the national control but influenced by the international situation, cannot be resolved. Only the flexibility of the system of higher education can reduce the effects of such uncertainties. With these limitations in mind, the tasks involved in achieving the objectives of the project can be summarized as follows:

(a) analysis of the socio-economic framework of the country and the pattern of development of education in general and higher education in particular;

(b) analysis of the demand of the economy for skills and supply from the higher education system in quantitative and qualitative terms by types of skill;

(c) analysis of substitution between occupation and education;

(d) analysis of expectations of the students for different kinds of higher education and the reasons for the difference in popularity among different fields of study, the availability of career guidance facilities and their effects on influencing the students' aspirations;

(e) analysis of expectations of the employers in respect of their job requirements, their promotion and recruitment practices, job description mechanism, and the salary structure, and expectations of the employed graduates in respect of the higher education system and jobs;

(f) establishing a set of indicators for improved interaction between the higher education system and the labour market for continuous adjustment in planning the development of higher education both quantitatively and qualitatively.

It is obvious that carrying out the above tasks cannot be the job of one specialist. It needs the co-operation of several agencies or research organizations. We shall discuss below how the research was organized for the various countries, and what role I.I.E.P. has played in the execution of the programme of research.

3. Organization of the Research

The research was organized in two phases. The first phase involved the country case studies which dealt with the above tasks in a more general way, giving emphasis on identification of issues generating some messages or hints for educational planning and decision-makers within a country and also identifying crucial issues which would need further in-depth analysis using the same data base. Although emphasis had been laid on developing countries, it was thought useful to include some industrialized countries to disseminate their methods of relating education with employment, the problems encountered and the ways proposed to tackle them among the developing countries. The objective of this dissemination was not to transplant these methods in developing countries but making the researchers and planners in developing countries acquainted with the methods and their problems so as to facilitate adaptation of these methods if they were found

to be useful. In the organization of the research national researchers have been involved not only in collecting data, but also in designing the research, its methodology, analysis and interpretation. The report-writing task was also shared among the different national researchers and I.I.E.P. participants. Wherever possible, the data analysis has been carried out in the country to reinforce local research capabilities. In forming the national team, not only institutions of higher education and Ministry of Education have been included, but private research agencies and other government agencies, particularly the Ministries of Planning and Labour have been involved in contributing to the study. In substantive terms, the priority areas of research have been developed through discussion among the researchers, educational planners and administrators of the country, the methodology proposed by I.I.E.P. has also gone through initial examination among the national team members, the instruments for data collection have not only been adapted but in some cases reformulated and redesigned by the national team and the analysis techniques and methods have been adjusted to the comprehensibility of the users of the research in the country. It was understood that international comparability would be lost to some extent, but it was appreciated that the country's own setup and its own views were more important than international comparability for simple academic purposes which could be dealt with in another phase if the basic framework was the same. It was also understood that no one country's experience could be transferred to another country without proper adaptation. It was important that the country concern itself with dealing with the problem of relating education with employment and know how to deal with this problem in its own context including the research infrastructure of the country. In this phase of the research, country reports have been published for the Democratic Republic of Sudan (9), Republic of Zambia (10), United Republic of Tanzania (11), the People's Republic of Poland (12), which had been chosen for its full employment strategy and monitoring system of the relationship between education and employment. Studies on the Republic of the Philippines (13), Federal Republic of Germany (14), Arab Republic of Egypt (15). State of West Bengal - India (16) and Bangladesh (17) are to be published in 1981. Studies in the USSR and Sri Lanka are at a fairly advanced stage.

Before publication, all the studies have gone through an institutional mechanism of review by both national researchers and decision-makers as well as outside reviewers and have been discussed at national workshops organized by the respective national teams in the countries concerned.

The second phase of the project deals with particular issues and hypotheses to be tested. A series of technical monographs have been published or are under preparation in co-operation with outside researchers and organizations. In this phase further analysis of the data-base created by the research project is being carried out since it was not possible to deal in-depth with all the issues in one report, and it is also necessary that analysis techniques applied to the research attain international norms. With this objective, theory-oriented research, including doctoral research, is being encouraged using the data-base generated, and requests have been received from interested research organizations, universities and international agencies, namely the University of Chicago, London School of Economics, Oxford University of Durham, the ILO and World Bank.

The project, since its inception, has been critically reviewed in respect of methodology, usefulness for policy formulation and possible impact on decision-making within the respective countries. Follow-up studies have also been organized in the countries to be conducted mainly by the national researchers wherever possible.

4. Methodological aspects

It has been mentioned in the section on organization of the research that the issues to be analysed were developed by the national team, consisting of different agencies. A typical list of issues to form the basis of the methodology to be adopted in a particular country study is given below. Any attempt to tackle these issues necessitates a better understanding of the mechanism of articulation between the employment and educational system. Such an understanding can be viewed from several perspectives: the view of the education system, that of the individual (student then workers), and of the employer (or firm). It was noted that it would be desirable to develop an integrated picture of the education-employment complex by intertwining all three.

4.1 The issues

1. What role have the resource potentials in the country played in the development of the different sectors of the economy?
2. How do the different economic sectors operate? What are their development prospects?

3. What role do population characteristics play in the fomulation of the education and manpower policy? Is education practised as a basic human right? Should work be considered also as a basic right?
4. What are the implications of the overall development strategy of the country for the planning of education in general and higher education in particular?
5. What roles are played by the different levels and types of education in the overall socio-economic development of the country?
6. How efficient and rational has been the educational development in the past in respect of structure, content and cost of operation?
7. What are the prospects of educational development in the future? What role does employability of the output play in this development?
8. What role does manpower planning play in planning for education?
9. How is the employability of graduates estimated? What role do manpower forecasts play in this regard?
10. How are the manpower forecasts made? How are they matched with the supply? What factors affect the supply?
11. What are the selection criteria for higher education?
12. What factors influence pursuit of higher education? How are individual expectations and attitudes reconciled with the national need for skills and capacity of absorption of the graduates in the labour market?
13. What is the correspondence between expected and actual educational career?
14. To what extent are content and method of instruction relevant to the needs of the job as perceived by the students, the graduates and the employers?
15. What role does career guidance play in the choice of an educational and occupational career?
16. What are the occupational and career expectations of the students? How are they determined? What is the degree of mismatch between expectations and achievements in respect of occupational career among the graduates?

17. What is the prevailing degree of substitution between education and occupation? What role do educational and socio-economic background play in this substitution as well as in the waiting period to get employment?
18. What characteristics of the job are satisfying to the graduates as perceived by the graduates themselves and by the employers?
19. What are the recruitment methods and selection criteria for a job and how relevant are they as perceived by the employers and the employees?
20. What role does wage structure play in the selection of a job by a graduate? How are starting salaries fixed? What is the degree of correspondence between academic performance and job performance as perceived by the graduates and the employers?
21. What are the alternatives to formal education for meeting the needs for skills to perform a job? How are they organized?
22. In what areas of training could the employers, i.e. the consumers of education, and the producers of skills, i.e. the institutions of higher education, co-operate with each other to bridge the gap between training needed for performing a job effectively and the training offered by the institutes of higher education?
23. What conclusions for policy in the field of higher education and in the employment market could be drawn from the results of the above analysis?

To answer the above questions, one could adopt different methodological approaches within the same conceptual framework of the research project. The alternative possibilities are discussed below and the rationale for choosing the approach adopted is also discussed.

4.2 Methodological aspects

Three alternative methods were explored to tackle the above problems in the study, as follows:

(I) Longitudinal studies of students, graduates and employers

This method assumes that a representative sample each of the different sections of the society involved in the system of higher education would be selected. Their personal, social, economic and educational characteristics are noted over time so as to grasp the phenomena of interrelationship between the system of higher education and employment over time. Needless to mention that in the analysis the above-listed problem areas would have to be

considered. Longitudinal studies essentially consider the cohorts of students, graduates and employers. Over time the samples should refer to the same populations of students, graduates and employers to allow for control of different characteristics generating from different cohorts, and to identify the effects of characteristics referring to the particular individuals in the analysis of the interrelationship. The difficulties encountered are:

(a) Such an operation becomes extremely costly, particularly in identifying the same individuals over a long period of time. As time passes, the nature of the sample changes substantially, violating the original assumption of retaining the characteristics of the same population.

(b) The decision-makers and planners have to wait for a long period of time to obtain the results of the analysis if they are to be of any use to them.

(c) With the time needed, the group of researchers, decision-makers and planners change their place of work so that retaining the same conceptual framework of the research and even the list of problem areas becomes difficult. One of the researchers of the U.S.A. who has adopted the longitudinal approach mentions that the whole team of researchers, except for himself, changed over time. It is very likely that even the leader of the team would change in a developing country within a five-year period and the whole research could fall through.

(d) Although the main argument in favour of the longitudinal studies has been to retain the characteristics of the population group studied over time, the changes in the socio-economic and political characteristics in a country influence greatly the characteristics of the population groups and so, in fact, the studies are considering different population groups over time.

However, what is more interesting in longitudinal studies is the revealing of the changes that occur among the same groups of people over time due to changes in the economy, politics and social characteristics of a country. Although perhaps not very useful for a decision-maker or planner at a particular point in time, the results may be useful for a researcher for theoretical purposes. For a developing country, the costs involved in tracing the same population group, the risk of changes in the

team of researchers, changes in the composition of the decision-makers and planners make such an approach less acceptable.

(II) Analysis of census data over time

The advantages of census data are that this avoids sampling error. Generally, such data are collected already by different national agencies for their own purposes. For example, the population characteristics of the labour force from the censuses of employment, and educational statistics would be available from the educational censuses. So, what the researcher has to do is to design his study so that answers to the listed problem areas could be available from the analysis of the census data. This would reduce the cost of collection of data greatly.

The disadvantages are:

(a) Not many developing countries have census data available on population, employment and education systems.

(b) The questions asked in censuses cannot give all the information needed for an analysis of the relationship between education and employment. The modification of the research design needed for adaptation with the census statistics may have to sacrifice analysis of important problem areas.

(c) Accuracy of census statistics has been very often put to question. Although the degrees of inaccuracy may not very severely affect the conclusions needed for policies in the area for which the census was conducted, analysis of such detailed issues as discussed in the conceptual framework could be seriously handicapped.

(d) Census data very rarely consider the attitudes and expectations of the different social groups, which, according to our framework, play an important role in matching the world of education with the world of work - not as yet recognized seriously by the planners of education and employment. In any case, if census data are available in respect of a particular population group, needed for the analysis of the relationship between education and work, they should be considered with whatever qualification needed.

(III) Analysis of cross-sectional data over time: tracer studies on the phenomenon of interaction between education and employment

This approach identifies the most important population groups at a particular point in time, takes representative samples of the groups,

analyses the relationship keeping in view the list of problem areas to be tackled at a point in time and assuming that the important variables and issues concerning the relationship between education and employment have been considered at the referred to point in time to provide tools for the decision-makers for adjusting the world of education with the world of work and vice-versa. Such exercises are repeated over time to examine the role time plays in the mechanism of interaction between the different factors of the world of education with those of the world of work. The exercises need each unit of observation of the samples to retrospect its characteristics backwards and forecast its characteristics for a future point of time. This latter aspect and the aspect of repetition of the exercise over time are considered as tracing the phenomenon of relationship between education and employment over time. In the analysis, consideration is given to whatever secondary information is available on any of the characteristics - be they census data, survey data or any descriptive analysis of the situation.

The disadvantages are:

(a) The individuality of the units of observation are lost.

(b) The scope for analysing generalizable aspects of the relationship between education and work is limited. Too much emphasis is given to the list of problem areas concerning the researcher and the decision-maker of the country. Theoretical aspects of the relationship are not tackled very deeply.

(c) Too many issues are treated sometimes with too crude techniques, particularly in respect of attitudes and expectations.

(d) Possibilities of repeating the same exercise in the same way after a period of time are limited.

(e) The exercise is more costly than the analysis of census data.

However, since this approach can (i) provide quick answers to some questions, (ii) provide a diagnostic analysis of the current situation to the decision-maker and planner, (iii) develop a data base with indicators to be used by the planners and decision-makers at a future point of time, and (iv) develop a team spirit of research work in different disciplines within a country with marginal assistance from the I.I.E.P., it was accepted by the national teams of researchers. The practical nature of the study, the simplicity of the analysis, the possibility of considering a large number of issues at the same time and the possibility of following up the

situation over time made this approach more acceptable to the research teams. We give below details of the rationale of the data-base needed for the study and the methods of analysis.

In the analysis of socio-economic framework, we tried to identify the resource potentials in quantitative form. When data were not available we depended upon the possible resource estimates and attempted to relate the resource potential with the actual role that resources play in the economic activities. For example, if the country had large resources of metallic ores, to what extent the primary sector of the economy was represented by that resource and to what extent this was processed indigenously could be either estimated in quantitative terms using simple indicators as ratios or percentages or in the absence of actual statistics, could be described on an ordinal scale. This information, however crude, could give us the possibility of examining if skills provided in the formal system of education could contribute in the matching between the resource potential and actual exploitation.

The importance of the different sectors could be identified by their percentage share in the gross domestic product. Their use lies in assessing the contribution higher education could make in promoting the development of particular sectors or in diversifying the economy. Here, as well, we use simple indicators like ratios, compound growth rates, etc. Similar indicators are used to analyse the characteristics of the population and their implication for education and manpower planning. If primary education is considered as a basic right demographic factors are to be considered in the development of educational facilities within the country. If second level education is not oriented only toward manpower needs, social demand will have an influence in the development pattern of second level education as well. This, in turn, would influence the development of higher education. It is in this way that population characteristics do affect education and manpower planning. The participation rates by age, sex, and home background would give us useful indications for formulating development policies of education.

If the country had a social and economic development strategy its effect on the educational development could be identified by the share of the budget for education. The skills needed for the development of the country and its regions could also be identified from the development strategy and new training needs could be recognized. This could be based

on perhaps regional potentials for development and the available infrastructure. From the description of the development policies one could identify what kind of training activities would have to be provided by the education system.

From the inventory of training needs one could then go on to analyse the potential responsive capacity of the education system. To estimate this capacity one has to look into the strength and weaknesses of the existing system with a critical diagnostic analysis of the system. This diagnostic analysis could involve identifying the factors affecting the past developments and their rationality as compared with the objectives set in the development strategy mentioned above. Influence of socio-economic characteristics of different groups of people on the development of education are identified by simple cross tabulations, frequency distributions and trend analysis by each characteristic. Rates of wastage could be estimated and reasons identified to reduce these rates. One could also analyse the matching in the development of different facilities of the education system with the enrolment growth to check for the quality of instruction. An analysis of the validity of the examination system can also be made by checking the scores with the performance in the work in the case of school-leavers. A correlation analysis would assist in finding the relation between educational performance and performance on the job. However, such analysis has to be broken down by different socio-economic characteristics of the student population, because we believe that not only formal education but other characteristics influence the performance as well.

Analysis of cost per student both social and private, is important to check not only the economic efficiency of an educational programme but also to find ways to reduce cost per student where it is irrationally high. With this diagnostic analysis of the operation of the present education system one would have the basis for the future development pattern of the education system. The future development strategy has to take into account the employability of the graduates which is possible only from some estimates of needs for trained skills. Manpower forecasts alone are not reliable estimates. One can only make rough guesses from these estimates. However, an analysis of the effectiveness of the manpower plans becomes useful at this stage to provide the analyst with the degree of unreliability and the extent of need for other measures. To identify

the employability of different types of graduates one has to analyse the structure of the existing labour force, the pattern of employment including recruitment and promotion practices, the wage policy, the labour productivity, and growths of different economic sectors (as analysed in the socio-economic framework), the policy of employment and the participation rates of different social groups in the employment market. In the traditional manpower forecasting methods only the sectoral economic growth rates and labour productivity are considered. In our case we could attempt to estimate the demand first by the traditional method and we shall estimate the supply of graduates following the flow rates in the educational system and then we shall identify the order of magnitude of the influence of the "other" factors on the employability of the graduates and their supply.

The "other" factors which influence the supply of the education system include the system of admission to the institutions of higher education, the factors determining the pursuit of higher education by socio-economic characteristics of the students, the role of career guidance, the mobility of the students within the education system and the expectations of the students about the world of work. These expectations would include such characteristics of the job as the salary, the career possibilities and the conditions of work.

To identify the influence of each factor on the supply of graduates by fields of studies a set of hypotheses is developed to indicate the degree of association between the factor and a particular socio-economic characteristic of the student so that implications of this association for planning of education could be drawn. A representative sample of students is drawn from the population of students by a suitable sampling technique. A questionnaire survey is conducted among them to collect the data necessary for testing the hypotheses. The details of the sampling technique applied and the organization of the survey are given in the next section. Statistical analysis method varies with the nature of the hypothesis and the availability of data. Wherever possible and desirable multivariate analysis was performed. The analysis was repeated for the graduates to cross-check the relationship between the expectations of the students and the perceptions of the graduates.

The expected mobility of the students from education to jobs can be correlated with the actual mobility of the graduates. The latter provides us with the substitution between specialization the graduate had in the education system and the specialization needed by the job. This reflects the flexibility of the labour market in respect of educational needs, and also provides us with the indication of the flexibility of a particular educational programme with respect to the needs of the job.

One of the factors which would measure the employability of a graduate in a particular field of specialization is the waiting period. A lack of accurate information on unemployment of graduates, the waiting period serves a useful purpose.

The employability of a graduate also depends upon the relevance of the training received with respect to the needs of the job. The degree of usefulness of the training received to perform a job is supposed to indicate the degree of relevance of the training, as perceived by the graduates. This can also be checked with the perceptions of the employers and an analysis of concordance could be performed to indicate the degree of matching between the two perceptions. This information can help orientate the programmes carried out in the institutions of higher education.

The estimation of employability of the graduates also depends upon the mobility of a graduate within the job. Estimation of this mobility can be made from the questionnaire surveys conducted among the graduates and reasons for the mobility can be identified. This will provide the employers with the necessary information to change the characteristics of the job and also for the institutions of higher education to modify the structure of the education system if the reason for changes in jobs was due to the mismatch of the training with the needs of the job. It is also useful to note what effects socio-economic and educational characteristics have on the earnings and success in the occupational career of the graduates. This would enlighten us on the role of education in redistribution of income among graduates, a role believed to be important by the human capital theorists.

Most of the analysis has been based on simple cross-tabulations, frequency distributions and chi-square statistics to analyse the degree of association among different characteristics. For the earnings functions, one would carry out regression analysis. Once the list of hypotheses has been determined, based on the checklist of questions mentioned

before, and the method of analysis decided upon, the necessary data for the graduates are collected with the help of a questionnaire survey conducted among a representative sample of employed graduates from the graduate population. The details of the sampling technique and the organization of the survey are given in the next section.

The employability of the graduates depends also on the relationship between the employers and the institutions of higher education, the recruitment and promotion system practised by the employers. The degree of importance of the different methods of recruitment can be determined by surveying a sample of employers giving them a scale of reference for each method. The mechanisms which could improve upon the interaction between the employers and the institutions could be identified with the help of a checklist of such mechanisms and asking the employers the score for each mechanism. The difference in the recruitment and selection criteria for different types of labour market, namely, public, private, etc., could be analysed with cross-tabulations and chi-square statistics. For different types of labour market, mechanisms of interaction may be different. This can also be identified by the score each type of labour market assigns to the different mechanism. The average score with the standard deviation might give us the preferred mechanism for each type of labour market.

The difference in wage structure of the different types of employers influences the choice of a job by the graduates. An analysis of the minimum starting salary of the different types of employers and the criteria for fixing the minimum salary provides useful information for analysing the relationship between salaries offered and the level and type of education, as practised by the employers of different types. This analysis is again done by simple cross-tabulations and chi-square statistic, the computation of average and standard deviations. Finally, an analysis of the concordance of the perceptions of the employers and the graduates in respect of the characteristics of a job is performed to identify areas where degree of mismatch is excessive so that the importance of better interaction among the employers and the employees can be recognized with empirical evidence and methods of corrective action could be devised. This analysis is done by assigning scores to each of a set of identified characteristics according to the degree of importance it bears to make the job satisfactory. Simple measures of association are used as statistics for this analysis. The data on the employers are collected in the same way as on the students and the graduates.

From this cross-sectional analysis one can identify the existing degree of mismatch between the system of higher education and the world of work to provide the analyst with measures for corrective action. When such analysis is conducted periodically the impact of such studies in correcting the situation can be estimated. The effectiveness of the instruments for analysis can also be determined and new instruments could be devised

The most important use of such follow-up studies is that it gives information on the changing nature of the relationship between higher education and employment over time. If the students, graduates and the employers in the surveys are identified by some means to represent the respective populations, then the follow-up studies will allow for checking the expectations and achievements for these categories of the population. One could then also examine which individual characteristics influence success in the occupational career and what relationship this success has on the educational performance. This analysis will also provide information on the changes in attitudes and expectations over time and help in identifying the reasons for such changes. In summary, if the students, graduates and employers can be sampled in a way to represent properly the population, some simple indicators and statistical analysis as designed above could furnish the decision-makers of higher education and those in the employment market with useful guidance for reducing the mismatch between the higher education system and the labour market.

The data needs for the above analysis and their sources are given in Table 1. It can be observed that the list of data needs is divided into five sets. The first, relating to the socio-economic framework of the country, are needed to analyse the problems (1) through (5) and (8) through (10) in the list of problem areas mentioned earlier. The second set of data needs relate to the development of the education system and these data are needed to diagnose the existing education system and to analyse the problems (5) through (7), (8) and (11). These two sets of data are normally available in the already published forms. The remaining sets of data mostly relate to attitudes and opinions of the students, graduates and employers in that order. Sometimes, objective information is also asked of them. These sets of data are collected through questionnaires, as detailed later. It will be observed from the questionnaires that, keeping in view the framework of the research, each questionnaire starts with a set of questions on personal or individual characteristics of the

population sampled, followed by a set of questions relating to the economic and educational status for the student and graduate population. Finally, the questions are directed to test a set of hypotheses. For example, to analyse the reasons for pursuit of higher education (problem (17)) a list of reasons was first identified searching through literature, discussions with students and graduates, and related information. Four such reasons were observed on a preliminary account to be common. Each of these reasons was listed and the students were asked to give their score on a three-point scale to what they perceived as the degree of importance of each of these reasons. If they noted that other factors not listed were also responsible for the pursuit of higher education, they were asked to list them as well. So, an open item was left for rectifying any error in identifying the reasons. The question therefore offered scope for multiple responses. The average score of each of the reasons for pursuit of higher education compared with the standard error will supply the importance of each factor. The analysis will further suggest if a particular reason is statistically "not important". Here, there were four hypotheses with four identified reasons. In each case, the null hypothesis was that the reason was not important. On a three-point scale, where 2 indicated "very important", 1 indicated "important", and 0 indicated "not important", the null hypothesis would be to set the average score in the population to zero and test if the average score achieved by the reason from the sampled students is significantly different from zero. This can be done by applying the "t" statistic. In addition, from the simple cross-tabulations, an idea can be formed whether any particular reason was more important for a particular group of students. This could later be tested statistically with a more sophisticated statistical analysis. In several cases, the same question was repeated to the students, graduates and employers. For example, importance of the different characteristics which would make a job satisfactory to an individual were tested for all three population groups.

4.3 The Sampling

The sampling design varied from country to country depending on the complexity of the population of students, graduates and employers and availability of a sampling frame. It was easier to identify the population of students because the list of institutions of higher education is much smaller than the list of employing units in a country. The sampling of

graduates and employers was a more difficult task and, except in some of the on-going studies, the unemployed graduates were excluded because of difficulty in tracing them, and because it would be extremely costly to survey them due to lack of information on their addresses. This shortcoming was not thought to be too serious given the objectives of the study, relating education with employment, and this relationship was supposed to be reasonably well reflected from the survey of the employed graduates. However, attempts have been made to include unemployed graduates in the studies in West Bengal, Bangladesh and Sri Lanka. Even if the employed graduates could be traced more easily, it was done through the employers. Employers were first identified who had higher education graduates on their staff. This process was chosen instead of an independent survey of graduates in order to save time and money and also for the possibility of better interaction between the graduates and employers.

The sampling design that is discussed below was followed in the study of the Philippines:

The Student Survey and the Sample

Information regarding the characteristics, attitudes, aspirations, and expectations of the students in the country were gathered through a survey among the post-secondary student population in school year 1977-78. Of the total student population of 613,807, 1.48 per cent or 9105 students responded to a fourteen-page paper-and-pencil questionnaire. Sampling was done using three major criteria: (1) the year level of the student, (2) the region of the location of the school where the student is currently enrolled, and (3) the field of specialization of the student. Only students in their third or fourth year of post-secondary work were sampled. They are the ones about to enter the labour market and compose 40 per cent of the total relevant population.

Since 75 per cent of the students were studying in schools located in six of the 13 regions in the Philippines, sample schools were randomly selected from among these regions only. These were regions I, IV, VI, VII, X and XIII, which are Manila Region, Western Visayas, Central Visayas, Northern Mindanao, and Southern Tagalog.

The fields of specialization of students were classified into twelve major types:Agriculture; Commerce and Business Administration; Engineering and Technology; Food; Nutrition and Dietetics; Law and Foreign Service; Humanities; Physical and Biological Sciences; Social Sciences; Medical

Sciences; Music and Fine Arts; Teacher Training; and Liberal Arts. Students were sampled among all these fields of specialization in accordance with the distribution at the national level. This was done by taking 40% of each region's enrolment per field of study. A systematic sampling technique with a random start was adopted.

The Graduate Survey and the Sample:

The sample of the employed graduates is closely tied with the sampling of the employers. As discussed below, the employers were selected on the basis of size of the firm across industrial classification and regions throughout the country. Thus, employed graduates were all from the sampled employer. They were selected at random from amongst employees who have completed either a post-secondary programme or a collegiate programme.

For firms with less than 200 employed graduates, a 10% sample was taken and for firms with 200 or more, 5%. A systematic sampling with a random start was used in drawing the sample respondents. The total number of valid filled-in questionnaires reached 4,655. Invalid questionnaires were very negligible, for all-out efforts were made right in the company site to make sure the return of the questionnaires.

The Sampling Design of the Employers:

A stratified systematic sampling technique with a random start was adopted.

The population considered included all establishments and government offices employing 5 or more workers. It was divided into two major strata; the private sector and the government sector. List of establishments from the 1975 Economic Census of Establishments of the National Census and Statistics Office (NCSO) was used as the sampling frame for the private sector stratum. Since there was no available list of government offices, the sampling frame for the other stratum was derived from the following sources:

1. List of existing positions in the government offices at the national and regional levels as classified by the Office of Compensation and Position Classification.
2. National Census and Statistics Office survey of local employment.

A 4 x 9 x 10 stratification scheme was constructed for the private sector stratum using main economic activity, region and employment size as substrata such that substrata within a column fall under an employment size and region and substrata within a row fall under an economic activity (See Fig. 1.)

Fig. 1. Stratification Scheme - Private Sector

Industry Division	E 1	E 2	E 3	E 4
	R I - XII	R I - XII	R I - XII	R I - XII
(1-digit code)				
1				
2				
3				
4				
5				
6				
7				
8				
9				

Employment size strata used were as follows:

a. 5 - 9 workers

b. 10 - 49 workers

c. 50 - 199 workers

d. 200 or more workers

The main economic activity classification was patterned after the 1977 Philippine Standard of Industrial Classification. These are:

a. Agriculture, Hunting, Forestry and Fishing

b. Mining and Quarrying

c. Manufacturing

d. Electricity, Gas and Water

e. Construction

f. Wholesale and Retail Trade

g. Transportation, Storage and Communication

h. Financing, Insurance, Real Estate and Business Services

i. Community, Social, Recreational and Personal Services

All the 13 administrative regional offices of the country were covered. In this study, however, Regions I and II (Ilocos and Cagayan Valley) and Regions IV, IV-A and V (Metro Manila, Southern Tagalog and Bicol) were combined in the selection of sample respondents. The 10 regional groupings were as follows:

Ilocos and Cagayan Valley
Central Luzon
Metro Manila, Southern Tagalog and Bicol
Western Visayas
Central Visayas
Eastern Visayas
Western Mindanao
Northern Mindanao
Southern Mindanao
Central Mindanao

Substratum under an employment size had a sampling fraction of 1/300 for size 5 - 9, 1/100 for size 10 - 49, 1/30 for size 50 - 199 and 1/10 for size 200 and over.

Sample establishments in each substratum were then drawn systematically using a random start. In the sampling process, however, stratum with insufficient establishments was not left empty and at least two sample establishments were extracted, except for stratum employment size 5 - 9 which constitutes the biggest bulk of the population where cells with less than 100 establishments were left empty.

For the government sector, offices were divided into two substrata: national and local. The national government substratum was further stratified into orientation and level while the local government stratum was stratified into three levels. The diagram below illustrates the basic stratification of the sampling frame:

	National			
Level	Economic	Social	Gen. Adm.	National Security

Local
Level
Provincial
City
Metropolitan Manila

A sampling fraction of 1/10 was used to determine the number of sampled offices. Again, samples were selected systematically using a random start. Samples for the regional level were not taken in the stratum of national security because national defense statistics were highly centralized and highly confidential.

The Questionnaires:

All three subjects of enquiry had some common variables in the lists of the conceptual groups of students, graduate and employer variables - variables which had to be measured to examine the issues and the questions listed in the beginning of this section. The common variables for all the three subjects of enquiry are given in Table 2. (18). Lists of variables for students, graduates and employers are given in Tables 3, 4 and 5.

From the conceptual groups of variables, a quasi-casual ordering of the three groups of variables could be made keeping in view (i) the aspects of the relationship we want to explore in our studies, (ii) the availability of information among the subjects of enquiry, and (iii) their relevance in answering the questions. This ordering is presented in Tables 6, 7 and 8 for the students, graduates and employers. It could be noted that some specific questions like minimum starting salary of the graduates are not asked in the employers' questionnaire. This was because such information was available for the public and parastatal sectors, which employ most of the graduates, in published documents. It is obvious that detailed items of the questionnaire had to be changed keeping in view the socio-economic, educational and political characteristics of the country. For example, in the list of student variables for the personal characteristics, the ancestral origin of the student was found to be an important item for the study in the Philippines, but the Tanzanian team found it redundant. The preferred type of educational programmes were included in the Philippines study with five alternative structures of the instructional system. This was omitted in the Tanzania study so as to reduce length and complexity of the questionnaire. Items for each question were developed after thorough discussion with the national researchers with the assumption that they had better insights of the probable responses each question could have. Most of the questions had an open item to control for the "identification error". It should be noted that some of the questions are asking direct information, particularly the background characteristics, namely the personal, community,

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(1) I am grateful to R. Noonan for preparing Tables 2 - 8 (15) based on the Tanzania study.

home, educational, current employment context, and others are asking attitudes and opinions of the subjects in respect of the educational system, or the system of employment. For example, satisfaction from the course, relevance of the course, factors inducing work in rural areas, characteristics of jobs to make them satisfactory, opinions in respect of the adequacy of the selection criteria to education and occupation fall in the second category. There are also some questions about expectations of the individuals, for example, the expected occupation of a student, expected earnings, etc. The last two types of questions are those which had to be handled with care, although in social sciences extensive use is being made of these types of questions today.

In the recent studies, the questionnaire surveys have been reinforced by direct interviews with respondents to increase the reliability of the responses (Philippines). In some cases, field testing has been adopted (Zambia). Even after pre-testing the questionnaire, sometimes it has occurred that it needed further improvement. In most cases, the questionnaires have been administered personally by the investigators. The questionnaires used for the Tanzania study are given in the Annex.

4.4 The Results

The results of the project should be discussed in two stages. First the findings of the different studies and the messages for educational planners, second is the contribution the project has made to the understanding of the problem of education and employment in the countries where the studies have been undertaken, particularly to the understanding of the behaviour of the three main factors involved in educational planning, namely, the students, the graduates and employers.

The first stage has been the subject of a separate paper by George Psacharopoulos and the present author (19), which synthesizes the findings of five of the studies already completed.

In respect of the second, the contribution is listed below (4):

1. The studies have made an impact on formulating educational policies in the countries where studies have been undertaken. Examples are those of the Sudan, Zambia, Tanzania, Philippines and Egypt. They have been given serious consideration in either the preparation of an educational plan, or in reforming the educational

(1) I am grateful to Prof. G. Psacharopoulos for articulating some of these contributions and also some of the criticisms that follow in a personal note.

system. The presentation of the impact of the studies by the country research teams at the Seminar in December 1978 is the evidence.

2. In most cases these studies have generated follow-up studies to be undertaken mainly by the national research teams.
3. The simultaneous sampling of students, graduates and employers, the main factors involved in the planning process is an innovation and has allowed a comprehensive analysis of the interaction between education and employment.
4. The other important contribution is the local involvement in carrying out a country project. In a sense this programme had had an educational function in the countries that provided the cases. Local researchers were exposed to new issues in educational planning and local manpower was trained on how to think in perhaps different terms, carry out huge questionnaire surveys, analyse them by the computer and write up the results.
5. The creation of a substantial data base in countries where one had little information before is another important contribution. The Sudan and Egypt are good examples. With the increase in the number of countries covered by the programme and especially with the increase of sample sizes in recent case studies a substantial data base emerges for comparative education work. The project's emphasis on least developed and most seriously affected countries of the world is to be noted, with appreciation.
6. This is related to (5) in that the data base created is serving the researchers in educational planning in universities and other international organizations. This is being done in consultation with the national team members. The data base is also being used for doctoral research in education in the countries and abroad.
7. The background chapters of a country report give the socio-economic setting and the historical evolution of the education system. For an individual researcher to collect this information would be impossible. This could be classic reading for those wishing to do further research on the same country.

8. The strong regional component found in the case of each country is another contribution. As of today, regional statistics on education usually relate to enrolments, classrooms and teachers in different regions. The programme, however, has added new statistics on the regional distribution of employment, student origin and the like. This material could be usefully exploited to help in the design and formulation of a regional education policy.
9. Another contribution is the feedback that educational institutions could get from their clientele. The scores of answers to opinion questions in the three questionnaires could be used on the social demand side of education (how satisfied are people with the education they receive) and also on the supply side (what kind of programmes educational institutes should offer).
10. The project has contributed in developing a modified manpower oriented approach to educational planning by broadening the domain of the traditional manpower forecasting technique in enlarging the number of parameters to be considered in a manpower oriented approach. It has estimated the participation rates in the labour force by different socio-economic characteristics, the substitution between specialization and occupation, and the role of attitudes in canalizing the students in the fields where they are needed most.

5. <u>The problems and limitations of the project</u>

Since its beginning, the project has been subject to periodic evaluation by experts in the field of educational research. These meetings have helped greatly in improving upon the method of analysis and the design of the questionnaire. One such meeting was held in 1976 when the project brought out two studies. The last one was held in December 1978. The objective of the last meeting was to give new orientation to the research in the ensuing medium-term plan, based on the experience during the previous medium-term plan. The meeting was attended by the representatives of all the national research teams from countries where studies had been launched, experts in the field from universities and international organizations and also a number of participants from countries that had expressed interest in conducting such research. The objective of the meeting was to make a critical evaluation of the project and not merely emphazise the good points, so that the national participants could revise the methodology of the analysis and the

I.I.E.P. could reformulate and redesign the research. The following suggestions came out of that meeting:

1. It was suggested that greater care (within the limitations of the countries) be devoted to the presentation of the actual education and labour market situations, specifically on growth rates, planned development strategies and manpower and educational development in respect of identifying needs.
2. After this tighter presentation is finished, it was also suggested that a more careful scrutiny be made of the survey questions on attitudes so as to make them less comprehensive but more in-depth in order that a more direct correspondence as to the relationship between schooling and work could then be fed into plan formulation and implementation. It was felt that there should be a closer integration between the presentation of the manpower situation and the contents of the attitudinal surveys of students, graduates and employers.
3. On the question "after this, what?", suggestions were put forward for making the reports more country specific in terms of the national leadership identifying the planning questions to be addressed, continuing the involvement of local researchers, and, if possible, the authoritative commitment of the nation to implementing the results of the studies.
4. On a different level, two or three suggestions were made to tackle the same general theme of higher education and employment by an issue-oriented study that could be done by one or a few closely related countries on such questions as: higher education and rural development, higher education and unemployment, higher education and technical personnel. An extreme position taken went so far as to question the usefulness of feasibility manpower studies. On the other hand, some participants felt that analysis of the relationship between education and employment could not be done without an analysis of the manpower demand and supply.
5. One larger question which, while not explicitly debated, nevertheless received a considerable amount of attention, was the operation of the labour market. In developing countries, this is not yet structured so as to make vocational guidance very relevant. On the other hand, job creation in agriculture and industry seemed to

be a greater priority in some places than the process of higher education.

6. The use of questionnaires in this research should be the subject of in-depth discussion.

The following problems were raised by the present author on the use of the questionnaires in this research, based on the criticisms received:

1. Sometimes we asked the subject to recall his past. There is the risk of "recalling error". This was not so serious with the students who did not have to recall facts too far in the past, but, with the graduates, we are not sure of the extent of such error when asking what they wanted to have as an occupational career, when they graduated from secondary school - something which occurred in some cases at least ten years beforehand.
2. Although we had kept an "open" item in the "closed" questions, we could hardly have any convergence on that response. Most of the time the respondent did not have any item which he or she could add to the list. Although identification of the items is done with extensive consultation among national researchers and sometimes with pre-testing of the questionnaires, the closeness of the questions could bias the respondent. We could not estimate the extent of such bias, so there could be "identification error" in the responses.
3. The non-response rate for items like father's income was very high to reduce the representativeness of the samples. The results, therefore, could be biased, due to "non-response error".
4. The questionnaires, often, seemed to be very long. Attempts could be made to reduce the length. If we have to deal with the issues listed above are there ways to reduce the number of questions asked? The more we discuss the problems and the issues, the greater the number of questions to be dealt with in the study which leads to lengthy questionnaires. What could be the use of factor analysis or principal component analysis in reducing the number of items in each question?
5. In some questions better formulation could increase the precision of the responses. For example, to analyse the substitution between education and occupation we asked the graduates their field of study in the school and the field of study they thought

could describe their job more relevantly (See for example Q.16, Graduate Questionnaire, Tanzania study). It would have been better if we could ask a description of the job as well as to cross-check what field matched with his work. But, this could make questionnaire still more lengthy. Here we are depending on the graduate's own judgement of the relevance of his training. Could there be a better way to find the answer?

6. The most important problem faced is the validity of attitudinal surveys. Although their need can hardly be ignored, we must find ways to take care of the following criticisms forwarded by some critics (16), (17), (18) of the project:
   - The attitudinal surveys which have been used were either to obtain the opinions of the individuals or identify the motivating factors. The answers can vary according to the context of the survey, or simply the phrasing of the questions. How to tackle the dubious answers? How to cross-check them?
   - The opinions expressed are sometimes so general that it is not easy to include them in a planning process, even if one is willing to considerably oversimplify the real world (20).
   - Another difficulty stems from the fact that motivations are seldom unique and that it is oversimplification to present the results in terms of mutually exclusive, one-sided answers (21).
   - There has been a division of opinion amongst researchers in respect of the mode of framing the questions: some suggest that questions on attitudes and motivations to be responded to frankly should be put in a conditional way (22). Others opine that conditional questions are most difficult to interpret because the respondents tend to answer them positively to satisfy the investigator (e.g. Q. 41, Student Questionnaire, Tanzania study). What would be the appropriate way to frame such questions?

Are there ways to obviate these difficulties in the attitudinal surveys which appear to us to be useful in the analysis of the relationship between education and employment? We may not agree with the critics in all that they say, as has been the reaction from some of the national participants of the project, but the critics are not entirely wrong of course. Are there ways to redress these difficulties?

These problems were the subject of a methodological workshop held at IIEP in 1979, which was attended by seven research team representatives and six outside researchers experienced in the use of questionnaires for research related to education and employment. The workshop included an exchange of ideas and experience on a bilateral basis between the developed country researchers and those from the developing countries.

Identification of the above problems and limitations was also a contribution to the field of research on educational planning in general and education and employment in particular. The continuous monitoring and evaluation built with the project gave I.I.E.P. new insights and new directions and knowledge. This was the basis for the new orientation of the project in the present medium-term plan started in 1979 and described briefly below.

6. The new orientation of the project in respect of issues, coverage and methodology

Based on the recommendations of the IIEP Governing Board and the seminar held in 1978, the project will attempt during the current medium-term plan of IIEP to deal with specific issues relating to the overall problem of education and employment. The following issues are to be dealt with:

1. The role of education in obtaining the first employment.
2. Education's role in distributing the graduates with different occupations and economic activities.
3. Determinants of salary structure and the influence of education.
4. The role of work experience during educational career on performance on the job and career promotion.
5. The utilization of educational qualifications on the job.
6. Role of education in the mobility of a graduate in his/her professional life.

In respect of coverage, it was suggested that all levels of education which have direct influence on the employment market, e.g. secondary technical and vocational and all types of post-secondary education, including universities, should be considered; coverage should also be extended to unemployed and self-employed graduates. However, the national priorities and capabilities in conducting the research are to be given due consideration in respect of coverage of the study in each country.

In respect of methodology, it was suggested that emphasis be put on follow-up of graduates who have come out of the school system fairly recently and are now in the employment market. The new entrants to the labour market are also to be considered so that not only job histories as related by the respondents can be examined but also the observed job search, unemployment and changes in salary structure and credential requirements can be examined. In some way this would be a tracer study which would attempt to draw the picture of career and job history by tracing backwards without waiting for following up graduates some years after graduation. Insofar as the sampling techniques are concerned, judgement sampling was to be avoided as far as possible, replaced by statistically acceptable sampling techniques. The questionnaires should be shortened and avoid as far as possible the opinion and attitude type questions. The recommendations of the methodological workshop, although sometimes conflicting, should be reconciled and following in future studies.

With these changes in view, a set of new studies have been launched since 1979. The scope and objectives of the studies had to fit in with the priority issues of the countries concerned as well as the new orientation of the project. Studies have been launched in Nepal, Indonesia, Pakistan, India - Karnataka, Bombay, Pune and Narendrapur, in P.D.R. Yemen, Nigeria - Kwara State, Botswana, and Peru. Also, in those countries where studies had already been completed follow-up studies are also being carried out, namely in the Sudan, Tanzania and Philippines.

The project's concern for inviting criticisms and suggestions at the national and international level, its changing methodology based on new knowledge and experience gained, and the contribution, however modest, it has been able to make in the countries concerned to improving upon the knowledge-base in the complex field of education and employment, have given rise to an increasing number of requests from Member States for studies to be undertaken.

ANNEXES

Table 1. List of variables and types of information and statistics collected.

Variables	Required information statistics	Sources
1. SOCIO-ECONOMIC FRAMEWORK OF THE COUNTRY		
(i) Economic potential of different regions.	(1) Estimates of reserves of natural resources.	(1) Geological surveys, agricultural surveys, economic surveys: government and non-government agencies.
	(2) Physical characteristics of the regions.	(2) Geographical surveys: government and non-government agencies.
	(3) History of the economic and social development of the country.	(3) Historical studies in the country: government and non-government agencies and individual authors.
(ii) Economic sectors, their growth and degree of balance with the resource potential, bottlenecks for development. The rôle of the rural sector in national development.	(1) The economic structure of the modern sector: the industrial origin of gross domestic product, level of saving, wage employment, the rôle of the subsistence sector, income *per capita*.	(1) Economic surveys, reports from national government agencies, international agencies and private agencies, and national economic and social development plans.
	(2) Their relevance with the natural resource potential : degree of exploitation of the natural resources and in-country processing: implications for types of skills needed.	(2) Same as above and manpower reports if available, and other studies on relating skills with techniques needed for exploitation and development of natural resources including agricultural resources.
(iii) Population characteristics by regions, social groups and sex.	(1) Regional distribution of population by social groups, sex and age.	(1) Census, sample surveys.
	(2) Growth of population: implications for educational policy.	(2) Same as above, and studies relating education with population.
	(3) Allocation of capital expenditure per head, by region.	(3) Economic surveys and government reports, estimates of public expenditure of the government.
	(4) Formal employment as percentage of total population.	(4) Census, sample surveys.
	(5) Attitudes and value systems of the people of different regions.	(5) Historical and social studies on the country, government and non-government.

Table 1 (continued)

Variables	Required information statistics	Sources
2. EDUCATIONAL SYSTEM		
(i) Past development of education in general and higher education in particular, its rationale and inconsistencies if any in the pattern of development as related to the socio-economic framework of the country.	(1) Statistics on enrolments by types and level of education — for the past and present — with special reference to higher education. (2) Enrolment by sex and region. (3) Growth of enrolment particularly for higher level of education. (4) Growth of physical facilities and other facilities, namely teachers, budget, etc. (5) Estimates of flow rates by grade, sex and level of education.	(1) - (5) Ministry of Education statistics, individual educational institutions, educational research units.
(ii) Existing organizational structure: its problems, if any, in respect of meeting the objectives.	(1) The facilities for education available at present in the formal system particularly for the higher level of education. (2) Linkage between the higher education system and the second-level education system. (3) Rôle of private and public sector agencies in the control of education in general and higher education in particular, in respect of budgeting, financing, curriculum development, etc.	(1) - (3) Same as above.
(iii) Quantitative development of higher education as related to the socio-economic framework of the country and the national policy guidelines.	(1) Stock of enrolment by type of higher education, by institution, sex and region of home. (2) The existing admission policy for different types of higher education. (3) Stock of graduates by specialization, institution, and sex. (4) Past trend of growth in enrolment and necessary facilities. (5) Cost per student by type of higher education.	(1) - (7) Same as above.

Table 1 (continued)

Variables	Required information statistics	Sources
	(6) The capacity of the institution to expand or control.	
	(7) Number of students abroad for training by type and duration of training.	
	(8) Alternative estimates of graduates to meet the needs of the economy at least quantitatively.	(8) National Policy guidelines, estimates of manpower needs, information on the institutions' capacity to expand and/or control estimated internal efficiency of the higher education system.
(iv) Characteristics of the labour force: employment situation.	(1) Labour force in the formal sector by sex, region, occupation level and income — participation rates by sex and age.	(1) Economic report, census, sample surveys: government and non-government.
	(2) Same information by different industries of the modern sector.	(2) Same as in (1).
	(3) Estimates of labour force in the informal sector and their earnings.	(3) Census, sample surveys of the rural sector — if any.
	(4) Estimates of productivity by sector.	(4) Economic survey, census of manufacturing industries conducted by central statistics agency or by any other agency.
	(5) Unemployment in the formal and informal sector.	(5) Employment exchange offices, sample surveys of employed graduates or waiting period of the graduates for getting a job, census figures, manpower surveys from Ministry offices, central statistical office or any other source.
	(6) Shortage of national skills in the modern sector.	(6) Same as above and also a survey of the employers.
	(7) Rôle of expatriates in the national development.	(7) Census, statistics on localization programmes of different agencies.
(v) Types of skill needed for the development of the economy.	(1) Stock of qualified manpower by nationality, educational level, occupation and sector serving.	(1) Manpower report, census statistics, survey of employers.

Table 1 (continued)

Variables	Required information statistics	Sources
	(2) National policy guidelines in respect of localization, economic growth and other attitudinal changes (national service scheme, etc.) of the people and social aspects of the country.	(2) Party document, if any, National Plans.
	(3) Alternative estimates of needs for highly qualified manpower by educational level, occupation and sector to be served.	(3) Manpower reports, survey of employers with alternative assumptions based on the economic uncertainty in the future.
3. ATTITUDES AND EXPECTATIONS OF STUDENTS IN RESPECT OF HIGHER EDUCATION[1]		
(i) Students' socio-economic background.	Sex, age, marital status, nationality, region of home, guardian's occupation, industry and income.	Student survey.
(ii) Educational status.	Secondary school attended, type of certificate, year of graduation, desired education career, year of study, reasons for undertaking higher education, reasons for change in the field of study — if any, sources of finance, adequacy of the secondary education, choice of present faculty, degree of satisfaction with present educational career.	- Do -
(iii) Expectations about higher education and employment.	Present employment, if any; estimated earnings if not in educational institution at present, reasons for continuing in the field of study if intending to be employed in a field other than the present field of study, dependence of the choice of career on success in present studies, expected employment sector, conditions for accepting a job in rural areas, importance of factors in the choice of an employment, expected annual earnings at different levels of working life.	- Do -

1. All sources for item 3 are student survey.

Table 1 (continued)

Variables	Required information statistics	Sources
(iv) Rôle of career guidance in higher education.	Sources of information, their adequacy.	Student survey
(v) Rôle of employment guidance.	Desirability of the involvement of educational institutions in providing such guidance, their operational mechanism, means of getting better knowledge about jobs.	- Do -
4. ATTITUDES AND EXPECTATIONS OF GRADUATES[1]		
(i) Socio-economic background.	Age, sex, marital status, region of home, present home, education and industry of father.	Graduate survey
(ii) Educational background and expectations about the education system	Reasons for pursuing higher education, reasons for change in field of study, if any; sources of finance for higher education, diplomas obtained, specialization and present occupation, degree of relevance of educational background with the job.	- Do -
(iii) Employment status.	Methods of obtaining first employment, waiting period to get first employment, nature of present employment, changes in jobs, if any, reasons for change, importance of different factors to make a job satisfactory, income in first employment and present income.	- Do -

1. All sources for item 4 are graduate survey.

Table 1 (continued)

Variables	Required information statistics	Sources
5. ATTITUDES AND EXPECTATIONS OF EMPLOYERS[1]		
(i) Background.	Date of establishment, type of control, size, the industry group.	Employers survey.
(ii) Employment characteristics.	Methods of recruitment, criteria for selection, desirability of and difficulties in having job description mechanism. Number of graduates employed by nationality, professional level, forecast of needs of graduates in the near future.	- Do -
(iii) Relation between the higher education sector and the labour market.	Degree of correlation between academic performance and job performance, organizational mechanism of in-service training — if any, provision for accepting students on 'sandwich' courses, methods of cooperation with the higher education institutes in the formulation and implementation of their programmes.	- Do -

1. All sources for item 5 are employers survey.

TABLE 2 SUMMARY LIST OF COMMON VARIABLE GROUPS

VARIABLE GROUP	VARIABLE NUMBER STUDENT	GRADUATE	EMPLOYER
PERSONAL CHARACTERISTICS	1	1	-
COMMUNITY CHARACTERISTICS	2	2	-
CHILDHOOD HOME CHARACTERISTICS	3	3	-
EARLY OCCUPATIONAL AND EDUCATIONAL DESIRES AND EXPECTATIONS	4	4	-
ADULT HOME CHARACTERISTICS	7	5	-
(CURRENT) EDUCATIONAL CHARACTERISTICS (MANPOWER REQUIREMENTS)	10	6	2
PREFERRED WAYS OF OBTAINING CAREER INFORMATION	13	10	-
ATTITUDES TOWARD WORK IN RURAL AREAS	14	11	-
OPINIONS ABOUT WORK	15	12	8
(EXPECTED/CURRENT)OCCUPATIONAL CAREER	16	8	(1)

TABLE 3 SUMMARY LIST OF CONCEPTUAL GROUPS OF STUDENT VARIABLES

GROUP NUMBER	VARIABLE GROUP
1	PERSONAL CHARACTERISTICS
2	COMMUNITY CHARACTERISTICS
3	CHILDHOOD HOME CHARACTERISTICS
4	SECONDARY SCHOOL CHARACTERISTICS
5	EARLY CAREER INFORMATION
6	OCCUPATION DESIRED AT END OF SECONDARY SCHOOLING
7	ADULT HOME CHARACTERISTICS
8	EDUCATIONAL CAREER DECISION
9	CURRENT EMPLOYMENT CONTEXT
10	CURRENT EDUCATIONAL CONTEXT
11	INSTITUTION SEEKS COOPERATION IN CAREERS INFORMATION
12	ATTITUDES AND OPINIONS ABOUT CURRENT EDUCATION
13	OPINION ABOUT CAREERS INFORMATION
14	ATTITUDES TOWARD WORK IN RURAL AREAS
15	OPINIONS ABOUT WORK
16	CURRENT OCCUPATIONAL EXPECTATIONS

TABLE 4. SUMMARY LIST OF CONCEPTUAL GROUPS OF GRADUATE VARIABLES

GROUP NUMBER	VARIABLE GROUP
1	PERSONAL CHARACTERISTICS
2	COMMUNITY CHARACTERISTICS
3	CHILDHOOD HOME CHARACTERISTICS
4	EARLY OCCUPATIONAL AND EDUCATIONAL EXPECTATIONS
5	ADULT HOME CHARACTERISTICS
6	EDUCATIONAL CHARACTERISTICS
7	EARLY OCCUPATIONAL CAREER
8	CURRENT OCCUPATIONAL CAREER
9	OPINIONS ABOUT EDUCATION
10	OPINIONS ABOUT CAREER INFORMATION
11	ATTITUDES TOWARD WORK IN RURAL AREAS
12	OPINIONS ABOUT WORK
13	WILL COOPERATE WITH INSTITUTION OF POST-SECONDARY EDUCATION

TABLE 5. SUMMARY LIST OF CONCEPTUAL GROUPS OF EMPLOYER VARIABLES

GROUP NUMBER	VARIABLE GROUP
1	ORGANIZATIONAL CHARACTERISTICS
2	MANPOWER CHARACTERISTICS
3	RECRUITMENT PRACTICES
4	CORRESPONDENCE BETWEEN ACADEMIC AND VOCATIONAL PERFORMANCE
5	IN-SERVICE TRAINING
6	OPINIONS TOWARD INSTITUTIONS OF HIGHER EDUCATION
7	PROVISION OF WORK OPPORTUNITIES WITHIN ORGANIZATION
8	OPINIONS ABOUT EMPLOYEE NEEDS

TABLE 6 QUASI-CAUSAL CONCEPTUAL ORDERING OF STUDENT VARIABLES(x)

1. PERSONAL CHARACTERISTICS

1.1 AGE (5)
1.2 SEX (6)

2. COMMUNITY CHARACTERISTICS

2.1 TANZANIAN CITIZEN (11)
2.2 HOME DISTRICT (10A)
2.3 PLACE OF RESIDENCE RURAL/URBAN (10B)

3. CHILDHOOD HOME CHARACTERISTICS

3.1 GUARDIAN (31)
3.2 EDUCATIONAL LEVEL OF MOTHER (33.1)
3.3 EDUCATIONAL LEVEL OF FATHER (33.2)
3.4 GUARDIAN'S OCCUPATION (32)
3.5 GUARDIAN'S INCOME (34)

4. SECONDARY SCHOOL CHARACTERISTICS

4.1 ATTENDED SECONDARY SCHOOL IN TANZANIA (1)
4.2 NAME OF LAST SECONDARY SCHOOL ATTENDED (2)
4.3 COMPLETED FORM VI (3)
4.4 LAST YEAR IN SECONDARY SCHOOL (4)

5. EARLY CAREER INFORMATION

5.1 RECEIVED CAREER INFORMATION BEFORE APPLYING FOR HIGHER EDUCATION (13A)
5.2 SOURCE OF CAREER INFORMATION (13B)
5.3 DEGREE OF SATISFACTION WITH CAREER INFORMATION (14)

6. OCCUPATION DESIRED AT END OF SECONDARY SCHOOLING (12)

7. ADULT HOME CHARACTERISTICS

7.1 MARITAL STATUS (7)
7.2 HAVE BEEN DIVORCED (8)
7.3 NUMBER OF CHILDREN (9)

8. EDUCATIONAL CAREER DECISION

8.1 REASONS FOR ENTERING POST-SECONDARY STUDY (19)
8.2 PRESENT COURSE WAS FIRST CHOICE (20)
8.3 HAVE CHANGED COURSE SINCE ENTERING (22)
8.4 REASON FOR CHANGING COURSE (22)
8.5 IF MORE CAREER INFORMATION HAD BEEN AVAILABLE, WOULD HAVE BEEN WILLING TO CHANGE COURSE (37)
8.6 ANTICIPATED EARNINGS IMMEDIATELY AFTER SECONDARY SCHOOLING (30)

(CONTINUED)

(x) The figures given in parentheses give the serial number of the question in the questionnaires of Tanzania study.

TABLE 6 (CONTINUED)

9. CURRENT EMPLOYMENT CONTEXT

9.1 CURRENT EMPLOYMENT STATUS (24)
9.2 CURRENT EARNINGS (25)

10. CURRENT EDUCATIONAL CONTEXT

10.1 CURRENT COURSE OF DEGREE (15)
10.2 NUMBER OF YEARS IN PRESENT COURSE (16)
10.3 INSTITUTION CURRENTLY ATTENDED (17)
10.4 IF UNIVERSITY, FACULTY ATTENDED (18)
10.5 MAJOR SOURCES OF FINANCING FOR PRESENT STUDIES (26)
10.6 BOARDING STUDENT (27)

11. INSTITUTION SEEKS COOPERATION IN CAREER INFORMATION (36)

12. ATTITUDES AND OPINIONS ABOUT CURRENT EDUCATION

12.1 LIKE PRESENT COURSE (21)
12.2 SECONDARY SCHOOL COURSE ADEQUATE PREPARATION FOR PRESENT COURSE (23)
12.3 IF NOT EXPECTING EMPLOYMENT IN MAJOR FIELD OF STUDY, REASON FOR REMAINING IN PRESENT COURSE(29)

13. OPINIONS ABOUT CAREER INFORMATION

13.1 INSTITUTION SHOULD TAKE INTEREST IN EMPLOYMENT POSSIBILITIES OF GRADUATES (35)
13.2 PREFERRED WAYS OF OBTAINING CAREER INFORMATION (38)

14. ATTITUDES TOWARD WORK IN RURAL AREAS

14.1 ASPECTS WHICH MIGHT INDUCE YOU TO WORK IN RURAL AREAS (41)
14.1.1 IMPORTANCE OF FINANCIAL INCENTIVES
14.1.2 IMPORTANCE OF PROMOTION ASPECTS
14.1.3 IMPORTANCE OF GREATER RESPONSIBILITY
14.1.4 IMPORTANCE OF OPPORTUNITY FOR FREER LIFE
14.1.5 IMPORTANCE OF OTHER REASONS
14.2 ASPECTS DISCOURAGING YOU FROM WORK IN RURAL AREAS (42)
14.2.1 IMPORTANCE OF LACK OF WATER, ELECTRICITY, ETC.
14.2.2 IMPORTANCE OF COMMUNICATION AND TRANSPORTATION DIFFICULTIES
14.2.3 IMPORTANCE OF BEING SEPARATED FROM FRIENDS AND RELATIVES
14.2.4 IMPORTANCE OF DULLNESS AND SLOWNESS OF RURAL LIFE
14.2.5 IMPORTANCE OF LACK OF SCOPE FOR IMPROVING COMPETENCE
14.2.6 IMPORTANCE OF DELAYS IN PROMOTION
14.2.7 IMPORTANCE OF OTHER REASONS

15. OPINIONS ABOUT WORK

15.1 FACTORS IN OBTAINING JOB SATISFACTION (44.1)
15.1.01 IMPORTANCE OF INTERESTING WORK
15.1.02 IMPORTANCE OF USING SPECIAL TALENT
15.1.03 IMPORTANCE OF CREATIVE WORK

(CONTINUED)

TABLE 6 (CONTINUED)

15.1.04 IMPORTANCE OF NO SUPERVISION
15.1.05 IMPORTANCE OF FURTHER STUDIES
15.1.06 IMPORTANCE OF IMPROVING COMPETENCE
15.1.07 IMPORTANCE OF BEING HELPFUL TO OTHERS AND SOCIETY
15.1.08 IMPORTANCE OF WORK WITH PEOPLE
15.1.09 IMPORTANCE OF A GOOD INCOME
15.1.10 IMPORTANCE OF TRAVEL
15.1.11 IMPORTANCE OF SUPERVISING OTHERS
15.1.12 IMPORTANCE OF BETTER PROSPECTS
15.1.13 IMPORTANCE OF A SECURE FUTURE
15.1.14 IMPORTANCE OF TIME FOR FAMILY AND HOBBIES
15.1.15 IMPORTANCE OF USING SKILLS LEARNED IN FORMAL SCHOOLING
15.2 FACTORS IN MEETING CAREER OBJECTIVES (44.2)
15.2.01 IMPORTANCE OF INTERESTING WORK
15.2.02 IMPORTANCE OF USING SPECIAL TALENT
15.2.03 IMPORTANCE OF CREATIVE WORK
15.2.04 IMPORTANCE OF NO SUPERVISION
15.2.05 IMPORTANCE OF FURTHER STUDIES
15.2.06 IMPORTANCE OF IMPROVING COMPETENCE
15.2.07 IMPORTANCE OF BEING HELPFUL TO OTHERS AND SOCIETY
15.2.08 IMPORTANCE OF WORK WITH PEOPLE
15.2.09 IMPORTANCE OF A GOOD INCOME
15.2.10 IMPORTANCE OF TRAVEL
15.2.11 IMPORTANCE OF SUPERVISING OTHERS
15.2.12 IMPORTANCE OF BETTER PROSPECTS
15.2.13 IMPORTANCE OF A SECURE FUTURE
15.2.14 IMPORTANCE OF TIME FOR FAMILY AND HOBBIES
15.2.15 IMPORTANCE OF USING SKILLS LEARNED IN FORMAL SCHOOLING

16. CURRENT OCCUPATIONAL EXPECTATIONS

16.1 INTEND TO SEEK EMPLOYMENT IN MAJOR FIELD OF STUDY (28)
16.2 SECTOR OF EXPECTED PERMANENT EMPLOYMENT (40)
16.3 EXTENT TO WHICH CAREER WILL DEPEND ON SUCCESS IN PRESENT STUDIES (39)
16.4 EXPECTED EARNINGS (43)
16.4.1 AT START OF CAREER
16.4.2 AFTER FIVE YEARS
16.4.3 AFTER TEN YEARS
16.4.4 NEAR RETIREMENT

TABLE 7 . QUASI-CAUSAL CONCEPTUAL ORDERING OF GRADUATE VARIABLES

1. PERSONAL CHARACTERISTICS
   - 1.1 AGE (2)
   - 1.2 SEX (3)

2. COMMUNITY CHARACTERISTICS
   - 2.1 TANZANIAN CITIZEN (1)
   - 2.2 REGION (4)
     - 2.2.1 NOW LIVING (4.1)
     - 2.2.2 HOME DISTRICT (4.2)

3. CHILDHOOD HOME CHARACTERISTICS
   - 3.1 EDUCATIONAL LEVEL OF MOTHER (7.1)
   - 3.2 EDUCATIONAL LEVEL OF FATHER (7.2)
   - 3.3 GUARDIAN'S OCCUPATION (30A)
   - 3.4 GUARDIAN'S INCOME (30B)

4. EARLY OCCUPATIONAL AND EDUCATIONAL EXPECTATIONS
   - 4.1 OCCUPATION DESIRED AT END OF SECONDARY SCHOOL (9A)
   - 4.2 REASON FOR UNDERTAKING POST-SECONDARY EDUCATION (9B)

5. ADULT HOME CHARACTERISTICS
   - 5.1 MARITAL STATUS (5)
   - 5.2 EDUCATIONAL LEVEL OF HUSBAND OR WIFE (6)

6. EDUCATIONAL CHARACTERISTICS
   - 6.01 HIGHEST ACADEMIC QUALIFICATION (AA)
   - 6.02 INSTITUTION FROM WHICH HIGHEST QUALIFICATION WAS RECEIVED (AB1)
   - 6.03 OTHER INSTITUTIONS ATTENDED (AB2)
   - 6.04 IF UNIVERSITY GRADUATE, FACULTY ATTENDED (AC)
   - 6.05 YEAR ADMITTED TO GRADUATING INSTITUTION (AD)
   - 6.06 YEAR RECEIVED HIGHEST QUALIFICATION (AE)
   - 6.07 CHANGED FIELD OF STUDY DURING HIGHER EDUCATION (12)
   - 6.08 REASON FOR CHANGED STUDY DURING HIGHER EDUCATION (12)
   - 6.09 FIELD OF SPECIALIZATION FOR HIGHEST QUALIFICATION (16.1)
   - 6.10 FIELD OF SPECIALIZATION MOST RELEVANT TO CURRENT JOB (16.2)
   - 6.11 EDUCATIONAL INSTITUTION HAD EMPLOYMENT OFFICE (20.2)
   - 6.12 SOURCE OF FINANCING FOR FIRST POST-SECONDARY EDUCATION (21)
   - 6.12 TRAINED TO BE TEACHER (11)

7. EARLY OCCUPATIONAL CAREER
   - 7.1 WAITING PERIOD BEFORE RECEIVING FIRST EMPLOYMENT (13.1)
   - 7.2 HOW FIRST EMPLOYMENT OBTAINED (13.2)
   - 7.3 SALARY IN FIRST PERMANENT EMPLOYMENT (29)
   - 7.4 CHANGED JOBS (18)
   - 7.5 REASON FOR CHANGING JOB (19A)

62 (CONTINUED)

TABLE 7 (CONTINUED)

A. CURRENT OCCUPATIONAL CAREER

A.1 SECTOR OF EMPLOYMENT (19A)
A.2 TEACHER (10)
A.3 HOURS WORKING PER WEEK (22)
A.4 SALARY IN PRESENT WORK (20A)

9. OPINIONS ABOUT EDUCATION

9.1 UTILITY OF EDUCATION RECEIVED FOR PRESENT JOB (14)
9.2 NECESSITY OF EDUCATIONAL QUALIFICATIONS FOR GETTING PRESENT JOB (15)

10. OPINIONS ABOUT CAREER INFORMATION

10.1 PREFERRED WAY OF RECEIVING CAREER INFORMATION (23)
10.1.1 RANK OF JOB EXPERIENCE DURING STUDIES
10.1.2 RANK OF INFORMATION FROM PROSPECTIVE EMPLOYERS
10.1.3 RANK OF CAREER PUBLICATIONS
10.1.4 RANK OF DISCUSSIONS WITH WORKERS
10.2 EMPLOYMENT OFFICE AT EDUCATIONAL INSTITUTION WOULD HAVE BEEN USEFUL (20.2)

11. ATTITUDES TOWARD WORK IN RURAL AREAS

11.1 ASPECTS WHICH MIGHT INDUCE YOU TO WORK IN RURAL AREAS (26)
11.1.1 IMPORTANCE OF FINANCIAL INCENTIVES
11.1.2 IMPORTANCE OF PROMOTION ASPECTS
11.1.3 IMPORTANCE OF GREATER RESPONSIBILITY
11.1.4 IMPORTANCE OF OPPORTUNITY FOR FREER LIFE
11.1.5 IMPORTANCE OF LOW COST OF LIVING
11.1.6 IMPORTANCE OF OTHER REASONS
11.2 ASPECTS DISCOURAGING YOU FROM WORK IN RURAL AREAS (27)
11.2.1 IMPORTANCE OF LACK OF WATER, ELECTRICITY, ETC
11.2.2 IMPORTANCE OF COMMUNICATION AND TRANSPORTATION DIFFICULTIES
11.2.3 IMPORTANCE OF BEING SEPARATED FROM FRIENDS AND RELATIVES
11.2.4 IMPORTANCE OF DULLNESS AND SLOWNESS OF RURAL LIFE
11.2.5 IMPORTANCE OF LACK OF SCOPE FOR IMPROVING COMPETENCE
11.2.6 IMPORTANCE OF DELAYS IN PROMOTION
11.2.7 IMPORTANCE OF OTHER REASONS

12. OPINIONS ABOUT WORK

12.1 FACTORS IN OBTAINING PRESENT WORK (17)
12.1.1 IMPORTANCE OF ACADEMIC RECORD FOR GETTING PRESENT JOB
12.1.2 IMPORTANCE OF APTITUDE TEST
12.1.3 IMPORTANCE OF INTERVIEW
12.1.4 IMPORTANCE OF PAST EXPERIENCE
12.1.5 IMPORTANCE OF LETTERS OF RECOMMENDATION
12.1.6 IMPORTANCE OF PHYSICAL APPEARANCE
12.1.7 IMPORTANCE OF MARITAL STATUS
12.1.8 IMPORTANCE OF OTHER FACTORS
12.2 EXTENT TO WHICH CHOICE OF CAREER DEPENDS ON SUCCESS IN STUDIES (24)

(CONTINUED)

TABLE 7. (CONTINUED)

12.3 FACTORS IN OBTAINING JOB SATISFACTION (25.1)
12.3.01 IMPORTANCE OF INTERESTING WORK
12.3.02 IMPORTANCE OF USING SPECIAL TALENT
12.3.03 IMPORTANCE OF CREATIVE WORK
12.3.04 IMPORTANCE OF NO SUPERVISION
12.3.05 IMPORTANCE OF FURTHER STUDIES
12.3.06 IMPORTANCE OF IMPROVING COMPETENCE
12.3.07 IMPORTANCE OF BEING HELPFUL TO OTHERS AND SOCIETY
12.3.08 IMPORTANCE OF WORK WITH PEOPLE
12.3.09 IMPORTANCE OF A GOOD INCOME
12.3.10 IMPORTANCE OF TRAVEL
12.3.11 IMPORTANCE OF SUPERVISING OTHERS
12.3.12 IMPORTANCE OF BETTER PROSPECTS
12.3.13 IMPORTANCE OF A SECURE FUTURE
12.3.14 IMPORTANCE OF TIME FOR FAMILY AND HOBBIES
12.3.15 IMPORTANCE OF USING SKILL LEARNED IN FORMAL SCHOOLING
12.4 FACTORS IN MEETING CAREER OBJECTIVES (25.2)
12.4.01 IMPORTANCE OF INTERESTING WORK
12.4.02 IMPORTANCE OF USING SPECIAL TALENTS
12.4.03 IMPORTANCE OF CREATIVE WORK
12.4.04 IMPORTANCE OF NO SUPERVISION
12.4.05 IMPORTANCE OF FURTHER STUDIES
12.4.06 IMPORTANCE OF IMPROVING COMPETENCE
12.4.07 IMPORTANCE OF BEING HELPFUL TO OTHERS AND SOCIETY
12.4.08 IMPORTANCE OF WORK WITH PEOPLE
12.4.09 IMPORTANCE OF A GOOD INCOME
12.4.10 IMPORTANCE OF TRAVEL
12.4.11 IMPORTANCE OF SUPERVISING OTHERS
12.4.12 IMPORTANCE OF BETTER PROSPECTS
12.4.13 IMPORTANCE OF A SECURE FUTURE
12.4.14 IMPORTANCE OF TIME FOR FAMILY AND HOBBIES
12.4.15 IMPORTANCE OF USING SKILLS LEARNED IN FORMAL SCHOOLING

13. WILL COOPERATE WITH INSTITUTION OF POST-SECONDARY EDUCATION (31)
13.1 AS MEMBER OF ADVISORY GROUP
13.2 FILLING IN QUESTIONNAIRES
13.3 ATTENDING MEETINGS

TABLE 8 QUASI-CAUSAL CONCEPTUAL ORDERING OF EMPLOYER VARIABLES

1. ORGANIZATIONAL CHARACTERISTICS
   1.1 DATE OF ESTABLISHMENT (2)
   1.2 SECTOR (3)
   1.3 INDUSTRIAL CLASSIFICATION (4)

2. MANPOWER CHARACTERISTICS
   2.1 NUMBER OF EMPLOYEES (5)
   2.1.1 FULL TIME
   2.1.2 PART TIME
   2.2 OCCUPATIONAL DISTRIBUTION OF EMPLOYEES (7)
   2.2.1 TOTAL NUMBER OF EMPLOYEES
   2.2.1.1 PROFESSIONAL, TECHNICAL AND RELATED
   2.2.1.2 ADMINISTRATIVE AND MANAGERIAL
   2.2.1.3 CLERICAL
   2.2.1.4 SALES
   2.2.1.5 SERVICES
   2.2.1.6 AGRICULTURE, FORESTRY, FISHING
   2.2.1.7 PRODUCTION, TRANSPORTATION
   2.2.2 TANZANIAN EMPLOYEES
   2.2.2.1 PROFESSIONAL, TECHNICAL, AND RELATED
   2.2.2.2 ADMINISTRATIVE AND MANAGERIAL
   2.2.2.3 CLERICAL
   2.2.2.4 SALES
   2.2.2.5 SERVICES
   2.2.2.6 AGRICULTURE, FORESTRY, FISHING
   2.2.2.7 PRODUCTION, TRANSPORTATION
   2.2.3 VACANCIES
   2.2.3.1 PROFESSIONAL, TECHNICAL AND RELATED
   2.2.3.2 ADMINISTRATIVE AND MANAGERIAL
   2.2.3.3 CLERICAL
   2.2.3.4 SALES
   2.2.2.5 SERVICES
   2.2.2.6 AGRICULTURE, FORESTRY, FISHING
   2.2.2.7 PRODUCTION, TRANSPORTATION
   2.3 NUMBER OF EMPLOYEES WITH EDUCATION BEYOND FORM VI
   2.4 MANPOWER REQUIREMENTS (FIELDS OF SPECIALIZATION) (19)
   2.4.1 ACTUAL REQUIREMENTS (1968)
   2.4.1.01 NATURAL SCIENCES
   2.4.1.02 ENGINEERING
   2.4.1.03 SOCIAL SCIENCES
   2.4.1.04 TECHNOLOGY
   2.4.1.05 HUMANITIES
   2.4.1.06 HEALTH
   2.4.1.07 BUSINESS AND COMMERCE
   2.4.1.08 AGRICULTURE
   2.4.1.09 LAW
   2.4.1.10 ADMINISTRATION
   2.4.1.11 OTHERS

(CONTINUED)

TABLE 8 (CONTINUED)

2.4.2 ACTUAL REQUIREMENTS (1973)
2.4.2.01 NATURAL SCIENCES
2.4.2.02 ENGINEERING
2.4.2.03 SOCIAL SCIENCES
2.4.2.04 TECHNOLOGY
2.4.2.05 HUMANITIES
2.4.2.06 HEALTH
2.4.2.07 BUSINESS AND COMMERCE
2.4.2.08 AGRICULTURE
2.4.2.09 LAW
2.4.2.10 ADMINISTRATION
2.4.2.11 OTHERS
2.4.3 ANTICIPATED REQUIREMENTS (1977)
2.4.3.01 NATURAL SCIENCES
2.4.3.02 ENGINEERING
2.4.3.03 SOCIAL SCIENCES
2.4.3.04 TECHNOLOGY
2.4.3.05 HUMANITIES
2.4.3.06 HEALTH
2.4.3.07 BUSINESS AND COMMERCE
2.4.3.08 AGRICULTURE
2.4.3.09 LAW
2.4.3.10 ADMINISTRATION
2.4.3.11 OTHERS
2.4.4 ANTICIPATED REQUIREMENTS (1981)
2.4.4.01 NATURAL SCIENCES
2.4.4.02 ENGINEERING
2.4.4.03 SOCIAL SCIENCES
2.4.4.04 TECHNOLOGY
2.4.4.05 HUMANITIES
2.4.4.06 HEALTH
2.4.4.07 BUSINESS AND COMMERCE
2.4.4.08 AGRICULTURE
2.4.4.09 LAW
2.4.4.10 ADMINISTRATION
2.4.4.11 OTHERS

3. RECRUITMENT PRACTICES
3.1 METHODS OF RECRUITING LARGEST NUMBER OF EMPLOYEES (8.1)
3.2 METHOD OF RECRUITING BEST EMPLOYEES (8.2)
3.3 CRITERIA FOR SELECTING EDUCATED APPLICANTS (9)
3.3.1 IMPORTANCE OF ACADEMIC RECORD
3.3.2 IMPORTANCE OF APTITUDE TESTS
3.3.3 IMPORTANCE OF INTERVIEW
3.3.4 IMPORTANCE OF PAST EXPERIENCE
3.3.5 IMPORTANCE OF LETTERS OF RECOMMENDATION
3.3.6 IMPORTANCE OF PHYSICAL APPEARANCE
3.3.7 IMPORTANCE OF MARITAL STATUS
3.3.8 IMPORTANCE OF OTHER ASPECTS
3.4 PROBLEMS IN DESCRIBING A JOB FOR RECRUITING PURPOSES (10)
3.5 STARTING SALARY OF PERSONS WITH FORMAL EDUCATION (18)

4. CORRESPONDENCE BETWEEN ACADEMIC AND VOCATIONAL PERFORMANCE (11)

(CONTINUED)

TABLE 8 (CONTINUED)

5. IN-SERVICE TRAINING

5.1 IN-SERVICE TRAINING FACILITIES (12)
5.2 TYPE OF IN-SERVICE TRAINING FACILITIES (13)
5.3 STAFF SENT ABROAD FOR IN-SERVICE TRAINING (14)
5.4 IF NO IN-SERVICE FACILITIES, WOULD LIKE TO INTRODUCE (15)

6. OPINION ABOUT INSTITUTIONS OF HIGHER EDUCATION

6.1 INSTITUTIONS OF HIGHER EDUCATION SHOULD BECOME MORE CONCERNED ABOUT YOUR NEEDS (16)
6.1.1 FORMULATION OF CURRICULA
6.1.2 METHODS OF INSTRUCTION
6.1.3 DEVELOPING NEW TRAINING PROGRAMS
6.1.4 RESEARCH PROJECTS
6.2 INSTITUTIONS OF HIGHER EDUCATION SHOULD HAVE SANDWICH COURSES (17.1)

7. PROVISION OF WORK OPPORTUNITIES WITHIN ORGANIZATION

7.1 INTERESTED IN PROVIDING VACATION EMPLOYMENT TO POST SECONDARY STUDENTS (17.2)
7.2 ORGANIZATION HAS PROJECTS WHICH COULD BE DONE BY STUDENTS DURING THEIR TRAINING (17.3)

8. OPINIONS ABOUT EMPLOYEE NEEDS

8.1 FOR JOB SATISFACTION (20.1)
8.1.01 IMPORTANCE OF INTERESTING WORK
8.1.02 IMPORTANCE OF USING SPECIAL TALENT
8.1.03 IMPORTANCE OF CREATIVE WORK
8.1.04 IMPORTANCE OF NO SUPERVISION
8.1.05 IMPORTANCE OF FURTHER STUDIES
8.1.06 IMPORTANCE OF IMPROVING COMPETENCE
8.1.07 IMPORTANCE OF BEING HELPFUL TO OTHERS AND SOCIETY
8.1.08 IMPORTANCE OF WORK WITH PEOPLE
8.1.09 IMPORTANCE OF A GOOD INCOME
8.1.10 IMPORTANCE OF TRAVEL
8.1.11 IMPORTANCE OF SUPERVISING OTHERS
8.1.12 IMPORTANCE OF BETTER PROSPECTS
8.1.13 IMPORTANCE OF A SECURE FUTURE
8.1.14 IMPORTANCE OF TIME FOR FAMILY AND HOBBIES
8.1.15 IMPORTANCE OF USING SKILLS LEARNED IN FORMAL SCHOOLING
8.2 FOR MEETING CAREER OBJECTIVES (20.2)
8.2.01 IMPORTANCE OF INTERESTING WORK
8.2.02 IMPORTANCE OF USING SPECIAL TALENT
8.2.03 IMPORTANCE OF CREATIVE WORK
8.2.04 IMPORTANCE OF NO SUPERVISION
8.2.05 IMPORTANCE OF FURTHER STUDIES
8.2.06 IMPORTANCE OF IMPROVING COMPETENCE
8.2.07 IMPORTANCE OF BEING HELPFUL TO OTHERS AND SOCIETY
8.2.08 IMPORTANCE OF WORK WITH PEOPLE
8.2.09 IMPORTANCE OF A GOOD INCOME
8.2.10 IMPORTANCE OF TRAVEL
8.2.11 IMPORTANCE OF SUPERVISING OTHERS
8.2.12 IMPORTANCE OF BETTER PROSPECTS
8.2.13 IMPORTANCE OF A SECURE FUTURE
8.2.14 IMPORTANCE OF TIME FOR FAMILY AND HOBBIES
8.2.15 IMPORTANCE OF USING SKILLS LEARNED IN FORMAL SCHOOLING

Paris, June 1974

GRADUATE QUESTIONNAIRE
To be completed by employed post-secondary graduates in Tanzania

All answers are confidential

This survey is being carried out by the
International Institute for Educational Planning, (Unesco), Paris
in conjunction with the
Ministry of National Education
Dar es Salaam, Tanzania

1. Are you a Tanzanian citizen ? Yes ☐ No ☐

2. What is your age ? Less than 20 years ☐ 20 - 25 years ☐
25 - 30 years ☐ more than 30 years ☐

3. Sex : Male ☐ Female ☐

4. (a) Indicate by a tick mark (√) against the region you live now under (1) and the region you consider your home district under (2)

Region	Live now (1)	Home district (2)	Region	Live now (1)	Home district (2)
Arusha	☐	☐	Morogoro	☐	☐
Coast	☐	☐	Mtwara	☐	☐
Dodoma	☐	☐	Mwanza	☐	☐
Iringa	☐	☐	Ruvuma	☐	☐
Kigoma	☐	☐	Shinyanga	☐	☐
Kilimanjaro	☐	☐	Singida	☐	☐
Lindi	☐	☐	Tabora	☐	☐
Mara	☐	☐	Tanga	☐	☐
Mbeya	☐	☐	Zanzibar & Pemba	☐	☐
Dar es Salaam	☐	☐	Rukwa	☐	☐

(b) Your permanent residence is in an Urban area ☐
Rural area ☐

5. Are you married ? Yes ☐ No ☐

6. What is the educational level of your husband or wife ?

None ☐ Form IV or less ☐
St. IV or less ☐ Form VI or less ☐
St. VII or less ☐ Post-secondary ☐
Post-graduate ☐

7. What is the highest level of education which your parents have ? (tick the correct box)

	Mother	Father
None	☐	☐
Standard IV or less	☐	☐
Standard VII or less	☐	☐
Form IV or less	☐	☐
Form VI or less	☐	☐
Post-secondary	☐	☐
Post-graduate	☐	☐

8. (a) What is the highest academic qualification you hold ?

Diploma - 1 year full time ☐

2 year full time ☐

3 year full time ☐

First degree (B.A., B.Sc. gen., B.Sc. engin. M.B.B.S.) ☐

Post-graduate diploma/certificate ☐

Second degree (M.A., M.Sc., etc.) ☐

Third degree (Ph.D) ☐

(b)

	Where did you get your highest qualification ?	Which other Institutions have you attended ?
University of Dar es Salaam	☐	☐
Dar es Salaam College of National Education	☐	☐
Iringa College of National Education	☐	☐
Technical College Dar es Salaam	☐	☐
Institute of Development Management	☐	☐
Fisheries Institute Dar es Salaam	☐	☐
Institute of Finance Management	☐	☐
Olmotonyi Institute of Forestry	☐	☐
Institute of Land Survey	☐	☐
Overseas	☐	☐

(c) If you are a university graduate, please mention the faculty : Arts ☐

Science ☐ Agriculture ☐ Engineering ☐ Medicine ☐ Law ☐

(d) In what year were you admitted to the Institution which gave you your highest academic qualification ? 19___

(e) In what year did you obtain your highest academic qualification ? 19___

9. (a) When you completed your secondary school education you wanted to be :

Natural Scientist	☐	Business man & Manager	☐
Engineer	☐	Agriculturist	☐
Social Scientist	☐	Lawyer	☐
Humanistic professional	☐	Other (specify)	☐
Health professional	☐		

(A list of the fields leading to each profession is enclosed in the end)

(b) Why did you undertake post-secondary study or training ? (tick one)

- Wanted a specific professional qualification ☐
- Desired study for its own sake ☐
- The country needed my talent for manpower needs ☐
- Better employment opportunities for graduates ☐

10. Are you a teacher ? Yes ☐ No ☐

11. Did you train to be a teacher ? Yes ☐ No ☐

12. If you changed your field of study during your education, indicate your SINGLE most important reason for the most recent change.

- I did not have enough money ☐
- My family wanted me to do something else ☐
- I later got better information on career possibilities ☐
- Someone in my family died, my family moved, etc. ☐
- My grades were not good enough ☐
- I did not like what I was doing ☐
- Another reason : _____ ☐

13. How did you get your first employment after graduation ? Indicate the waiting-period.

- Through the Institution from which you graduated ☐ ☐☐ months
- NHLMAC (Central Establishment) ☐
- Appointment Bureau ☐
- Newspaper Advertisement ☐
- Personal contacts with the employers ☐
- Tied to the employment by bonding ☐
- Another method (specify) _____ ☐

14. In your own opinion, do you think that the education you received was useful to the needs of your job ?

Very useful ☐ Useful ☐ Useless ☐

15. To what extent were your educational qualifications necessary for getting your present job ?

Very necessary ☐ Necessary ☐ Not necessary ☐

16.

	Which field did you specialize in for your highest qualifications ?	Which field is the most relevant to your current job?
Natural Sciences	☐	☐
Engineering	☐	☐
Social Sciences	☐	☐
Humanities	☐	☐
Health (Medicine)	☐	☐
Business and Commerce	☐	☐
Agriculture	☐	☐
Law	☐	☐
Administration	☐	☐

(A list of the fields leading to each profession is enclosed in the end).

17. How important do you consider each of the following factors had in your getting the job ?

	Very important	Important	Unimportant
Academic record	☐	☐	☐
Aptitude tests	☐	☐	☐
Interview	☐	☐	☐
Past experience in a similar type of job	☐	☐	☐
Letters of recommendation	☐	☐	☐
Physical appearance	☐	☐	☐
Marital status	☐	☐	☐
Others (specify) _____	☐	☐	☐

18. Did you ever change your job ? Yes ☐ No ☐

19. (a) If you changed your job, why did you make this change ?

Better conditions of service ☐
Better use of training ☐
Better prospects for promotion ☐
More suited to personal talents ☐
Lost previous job ☐
Did not get along with the people you were working with ☐
Other reasons ☐

(b) In what sector are you working now ?

Government ☐
Parastatal sector ☐
Private sector ☐
Self employed ☐

20. Did the educational institution you attended last have an employment office ?

Yes ☐ No ☐

If not, would it have been useful to you if there had been one ?

Yes ☐ No ☐ No opinion ☐

21. What was the major source of finance for your FIRST post-secondary education ?

Government bursary	☐	Family	☐
Scholarships from other agencies	☐	Own efforts (employment savings)	☐

22. How many hours approximately do you work per week ? ☐☐☐

23. The following list gives four ways of obtaining better knowledge on conditions of work, promotion prospects, etc. Please rank them in order of preference (1 = being the best ; 4 = the least)

Practical job experience during the course of study (eg. sandwich courses, practical teaching, vacational employment)	☐
Personally getting information from prospective employers	☐
Reading careers publications	☐
Discussing with workers from particular fields	☐

24. To what extent did choice of career depend on success in your studies ,

Very much ☐ Somewhat ☐ Not at all ☐

25. How important do you think each of the following factors is

(1) towards making a job satisfactory, and
(2) towards meeting career objectives

	Towards making a job satisfactory (1)			Towards meeting career objectives (2)		
	Very imp.	Imp.	Not imp.	Very imp.	Imp.	Not imp.
Interesting work	☐	☐	☐	☐	☐	☐
Use of special talent	☐	☐	☐	☐	☐	☐
Creative work	☐	☐	☐	☐	☐	☐
No supervision	☐	☐	☐	☐	☐	☐
Further studies	☐	☐	☐	☐	☐	☐
Improve competence	☐	☐	☐	☐	☐	☐
Helpful to others and society	☐	☐	☐	☐	☐	☐
Work with people	☐	☐	☐	☐	☐	☐
Good income	☐	☐	☐	☐	☐	☐
Travel	☐	☐	☐	☐	☐	☐
Supervise others	☐	☐	☐	☐	☐	☐
Better prospects	☐	☐	☐	☐	☐	☐
Secure future	☐	☐	☐	☐	☐	☐
Time for family and hobbies	☐	☐	☐	☐	☐	☐
Use of skill learned in formal schooling	☐	☐	☐	☐	☐	☐

26. Which of the following factors might induce you to work in rural areas ? (Please indicate the degree of importance)

	Very important	Important	Unimportant
Financial incentives	☐	☐	☐
Promotional prospects	☐	☐	☐
A post of greater responsibility	☐	☐	☐
Opportunity for a freer life	☐	☐	☐
Low cost of living	☐	☐	☐
Another reason (specify) _____	☐	☐	☐

27. Which of the following factors would discourage you from taking a job in the rural areas ? (Please indicate the importance of each of these factors)

	Very important	Important	Not important
Lack of tap-water, electricity, etc.	☐	☐	☐
Communication and transportation difficulties	☐	☐	☐
Separation from friends and relatives	☐	☐	☐
Belief that rural life is dull and slow	☐	☐	☐
No scope for improving competence	☐	☐	☐
Possible delays in promotion	☐	☐	☐
Others (specify) _____	☐	☐	☐

28. What is your monthly gross salary at present ? Shs. ☐

29. What was your monthly gross salary when you took up your first permanent job ?

Shs. ☐

30.(a) Indicate your guardian's occupation when you were a post-secondary student from the occupational classification list in the Annex II. ☐A☐☐☐

(b) When you were a post-secondary student, what was your guardian's income per month ?

Less than Shs. 250 ☐ Shs. 250 - 500 ☐ Shs. 500 - 750 ☐

Shs. 750 - 1,000 ☐ More than Shs. 1,000 ☐

31. If the Institution you attended for your post-secondary education would ask for your co-operation, would you be willing to co-operate within your time limits in the following areas ?

	Yes	No	No opinion
As a member of an advisory group	☐	☐	☐
Filling out some questionnaires from time to time	☐	☐	☐
Attending some of the meetings	☐	☐	☐

32. I hereby declare that the information contained in this questionnaires is complete and correct to the best of my knowledge and belief.

Signed : _____

Date : _____

ANNEX I

List of subjects under different fields of study :

Natural Science :	Biological Science
	Premedicine
	Chemistry
	Earth Science
	Physics
	Other physical sciences
	Mathematics
Engineering :	Chemical
	Civil
	Electrical
	Industrial
	Mechanical
	Mining
Social Science :	Economics including Home Economics
	History
	Political Science
	Psychology
	Sociology and anthropology
	Geography
Humanities and Arts :	
	Swahili
	English and Journalism
	Fine Arts
	Foreign language
	Philosophy
	Religion
Health :	Pharmacy (nursing for women)
	Medicine
Administration :	Management Science
	Business Administration
	Civil Service Training

ANNEX II

OCCUPATIONAL CLASSIFICATION LIST

Code	Occupational Area
A00	**Unemployed Worker**
	Professional Technical and Related Workers
A01	Physical scientists and related workers
A02	Architects, engineers and related workers
A03	Aircraft and ships' officers
A04	Life scientists and related technicians
A05	Medical, dental, veterinary and related technicians
A06	Statisticians, mathematicians, systems analysts and related technicians
A07	Economists
A08	Accountants
A09	Jurists, lawyers, judges
A10	Teachers
A11	Workers in religion (Ministers of religion)
A12	Authors, journalists and related workers
A13	Sculptors, painters, photographers and related creative artists
A14	Composers and performing artists
A15	Athletes, Sportsmen and related workers
A16	Professional, technical and related workers not classified elsewhere
	Administrative and Managerial Workers
A17	Legislative officials and Government administrators
A18	Managers
A19	Government executive officials
	Clerical and Related Workers
A20	Clerical supervisors
A21	Stenographers, typists and card- and tape-punching machine operators
A22	Bookkeepers, cashiers and related workers
A23	Computing machine operators
A24	Transport and communications supervisors
A25	Transport conductors
A26	Mail distribution clerks
A27	Telephone and telegraph operators
A28	Clerical and related workers not elsewhere classified
	Sales Workers
A29	Sales supervisors, technical salesmen, manufacturing agents, shop assistants etc.
	Service Workers
A30	Cooks, domestic servants, waiters, bartenders, cleaners, hairdressers etc.
	Agricultural, animal husbandry, forestry workers and fishermen
A31	Farm workers, forestry workers, charcoal burners fishermen etc.
	Production and related workers, transport equipment operators and labourers
A32	Production supervisors and general foremen, miners tailors, machine tool operators, broadcasting station operators, cinema projectionists, plumbers, printers, photographers, painters, bricklayers, carpenters, construction workers, equipment operators, freight handlers, transport equipment operators, etc.
A33	**Undergoing further training**

Paris, June 1974

EMPLOYER QUESTIONNAIRE

To be completed by employers of post-secondary graduates in Tanzania

All answers are confidential

This survey is being carried out by the International Institute for Educational Planning, (Unesco), Paris

in conjunction with the

Ministry of National Education Dar Es Salaam, Tanzania

1. Name of the Organisation : /_____/

2. Date of establishment : /____/

3. Is your organisation : Government /_/ Parastatal /_/ Private /_/

4. Give the Industrial classification of your organisation (see the industrial classification list in Annex I) /B/ /_/

5. Number of employees : Full-time /_____/ Part-time /_____/

6. Approximate number of employees having at least one year of education after Form VI. /_____/

7. Number of :

	Tanzanians	Non Tanzanians	Total	(Unfilled) vacancie
Professional Technical and related workers	/____/	/____/	/_____/	/___
Administrative and Managerial workers	/____/	/____/	/_____/	/___
Clerical and related workers	/____/	/____/	/_____/	/___
Sales workers	/____/	/____/	/_____/	/___
Service workers	/____/	/____/	/_____/	/___
Agricultural, animal husbandry, forestry workers and fishermen	/____/	/____/	/_____/	/___
Production and related workers, transport equipment operators and labourers	/____/	/____/	/_____/	/___

(see the occupational classification list in the Annex I)

8. What methods do you use to recruit employees with post-Form VI education ? (tick the appropriate box in each column)

	Largest number	Best employees
Educational Institution authorities	/_/	/_/
Employment exchange office	/_/	/_/
Government manpower office	/_/	/_/
Newspaper advertisements	/_/	/_/
Personal contacts	/_/	/_/
"Bonding" students by scholarships	/_/	/_/
Another method : (specify) _____	/_/	/_/

9. How important do you consider each of the following criteria in selecting employees who have post-Form VI education.

	Very important	Important	Unimportant
Academic record	☐	☐	☐
Aptitude tests	☐	☐	☐
Interview	☐	☐	☐
Past experience in ajob of a similar type	☐	☐	☐
Letters of recommendation	☐	☐	☐
Physical appearance	☐	☐	☐
Marital status	☐	☐	☐
Others (specify) _____	☐	☐	☐

10. What is the SINGLE most difficult problem in describing a job for recruitment purposes ?

No correspondence between the educational institution and the employers needs ☐

The graduates do not have the training you would like them to have ☐

Good performance in the academic life does not mean better job performance ☐

The jobs are too complex for precise specification of educational qualifications ☐

Another (specify) _____ ☐

11. What do you think is the degree of correspondence between academic performance and job performance ?

	Diploma	Graduate	Post-graduate
Very high degree of correspondence	☐	☐	☐
Medium degree of correspondence	☐	☐	☐
No correspondence at all	☐	☐	☐

12. Do you have provision for in-service training facilities in your organisation for employees having post-secondary education ? Yes ☐ No ☐

13. If you DO have in-service training indicate the type(s) from the list below. If you do NOT have such facilities, use the same list to indicate the type you would prefer.

Staff away from your organisation : full-time ☐ part-time ☐

Training conducted in your firm ☐

Any other type (specify) _____ ☐

14. Do you send any staff abroad for training ? Yes ☐ No ☐

15. If you do NOT have any in-service training programmes, would you like to introduce one ? Yes ☐ No ☐

16. In what ways would you like to see the institutions of higher education become more concerned about your needs.

	Yes	No
Formulating their curricula	☐	☐
Choosing the method of instruction	☐	☐
Development of new training programmes	☐	☐
Carrying out research projects related to your organisation	☐	☐

17. Would you like the institutions of higher education to have sandwich training programmes ? Yes ☐ No ☐

Are you interested in offering vacation employment to post-secondary students ? Yes ☐ No ☐

Do you have projects in your organisation which could be done by students during their training ? Yes ☐ No ☐

18. Would you kindly indicate the approximate starting salary per month including allowances for an employee with one year of formal education after Form VI.

Shs. /_____/

19. Please give the best estimates you can for the following for your concern :

Fields of specialization (1)	No. of employees in 1968	1973	1977	1981
Natural sciences	/_____/	/_____/	/_____/	/_____/
Engineering	/_____/	/_____/	/_____/	/_____/
Social sciences	/_____/	/_____/	/_____/	/_____/
Technology	/_____/	/_____/	/_____/	/_____/
Humanities	/_____/	/_____/	/_____/	/_____/
Health (medicine)	/_____/	/_____/	/_____/	/_____/
Business & Commerce	/_____/	/_____/	/_____/	/_____/
Agriculture	/_____/	/_____/	/_____/	/_____/
Law	/_____/	/_____/	/_____/	/_____/
Administration	/_____/	/_____/	/_____/	/_____/
Others	/_____/	/_____/	/_____/	/_____/

(1) Please see Annex II for the list of subjects under each field of study.

20. How important do you think each of the following factors is

(1) towards making a job satisfactory for the employees, and
(2) towards meeting career objectives of the employees.

	Towards making a job satisfactory (1)			Towards meeting career objectives (2)		
	Very Imp.	Imp.	Not imp.	Very imp.	Imp.	Not imp
Interesting work	☐	☐	☐	☐	☐	☐
Use of special talent	☐	☐	☐	☐	☐	☐
Creative work	☐	☐	☐	☐	☐	☐
No supervision	☐	☐	☐	☐	☐	☐
Further studies	☐	☐	☐	☐	☐	☐
Improve competence	☐	☐	☐	☐	☐	☐
Helpful to others and society	☐	☐	☐	☐	☐	☐
Work with people	☐	☐	☐	☐	☐	☐
Good income	☐	☐	☐	☐	☐	☐
Travel	☐	☐	☐	☐	☐	☐
Supervise others	☐	☐	☐	☐	☐	☐
Better prospects	☐	☐	☐	☐	☐	☐
Secure future	☐	☐	☐	☐	☐	☐
Time for family and hobbies	☐	☐	☐	☐	☐	☐
Use of skill learned in formal schooling	☐	☐	☐	☐	☐	☐

Signature : _____

Title : _____

Date : _____

ANNEX I

OCCUPATIONAL CLASSIFICATION LIST

Code	Occupational Area
A00	**Unemployed Worker**
	Professional Technical and Related Workers
A01	Physical scientists and related workers
A02	Architects, engineers and related workers
A03	Aircraft and ships' officers
A04	Life scientists and related technicians
A05	Medical, dental, veterinary and related technicians
A06	Statisticians, mathematicians, systems analysts and related technicians
A07	Economists
A08	Accountants
A09	Jurists, lawyers, judges
A10	Teachers
A11	Workers in religion (Ministers of religion)
A12	Authors, journalists and related workers
A13	Sculptors, painters, photographers and related creative artists
A14	Composers and performing artists
A15	Athletes, Sportsmen and related workers
A16	Professional, technical and related workers not classified elsewhere
	Administrative and Managerial Workers
A17	Legislative officials and Government administrators
A18	Managers
A19	Government executive officials
	Clerical and Related Workers
A20	Clerical supervisors
A21	Stenographers, typists and card- and tape-punching machine operators
A22	Bookkeepers, cashiers and related workers
A23	Computing machine operators
A24	Transport and communications supervisors
A25	Transport conductors
A26	Mail distribution clerks
A27	Telephone and telegraph operators
A28	Clerical and related workers not elsewhere classified
	Sales Workers
A29	Sales supervisors, technical salesmen, manufacturing agents, shop assistants etc.
	Service Workers
A30	Cooks, domestic servants, waiters, bartenders, cleaners, hairdressers etc.
	Agricultural, animal husbandry, forestry workers and fishermen
A31	Farm workers, forestry workers, charcoal burners fishermen etc.
	Production and related workers, transport equipment operators and labourers
A32	Production supervisors and general foremen, miners tailors, machine tool operators, broadcasting station operators, cinema projectionists, plumbers, printers, photographers, painters, bricklayers, carpenters, construction workers, equipment operators, freight handlers.transport equipment operators, etc.

INDUSTRIAL CLASSIFICATION LIST

Code	Industrial Area
B00	**Unemployed**
B01	**Agriculture** Field crops, orchards, cattle, poultry, erosion control, wildlife, fisheries etc.
B02	**Mining** Quarries, minerals, precious stones, fuel (coal) etc.
B03	**Manufacturing** Food, beverages, tobacco, leather, timber, paper-board, printing and publishing, chemicals, petroleum, rubber products, plastics, china, building materials, metals, other manufacturing industries etc.
B04	**Construction** Buildings, railways, roads, airports, dams, mining works cementation, construction of shafts, etc.
B05	**Electricity and Water** Electric plants and grids, water supply plants, etc.
B06	**Trade** Stores and other distribution agencies, etc.
B07	**Financial Institutions and Insurance**
B08	**Real Estate**
B09	**Transport and Communications** Road,rail and air transport, boats, telecommunications, radio, T.V., etc.
B10	**Government Administration**
B11	**Community and Business Services** Sanitation, social and related comminity services, education, medical and veterinary services, welfare institutions, recreational and cultural services, police, fire, etc.
B12	**Hotels, Restaurants and Tourism**

ANNEX II

List of subjects under different fields of study :

Natural Science :	Biological Science
	Premedicine
	Chemistry
	Earth Science
	Physics
	Other physical sciences
	Mathematics
Engineering :	Chemical
	Civil
	Electrical
	Industrial
	Mechanical
	Mining
Social Science :	Economics including Home Economics
	History
	Political Science
	Psychology
	Sociology and anthropology
	Geography
Humanities and Arts :	
	Swahili
	English and Journalism
	Fine Arts
	Foreign language
	Philosophy
	Religion
Health :	Pharmacy (nursing for women)
	Medicine
Administration :	Management Science
	Business administration
	Civil Service Training

Paris, June 1974

STUDENT QUESTIONNAIRE
To be completed by students of post-secondary institutions in Tanzania

All answers are confidential

This survey is being carried out by the

International Institute for Educational Planning, (Unesco), Paris

in conjunction with the

Ministry of National Education
Dar Es Salaam, Tanzania

1. Did you attend secondary school in Tanzania ? Yes ☐ No ☐
2. Name of the last secondary school attended : _____
3. Did you do Form VI ? Yes ☐ No ☐
4. Last year of secondary school : 19
5. What is your age ? Less than 20 years ☐ 20-25 years ☐
   25-30 years ☐ more than 30 years ☐
6. Sex : Male ☐ Female ☐
7. Are you married ? Yes ☐ No ☐
8. Have you been divorced ? Yes ☐ No ☐
9. How many children do you have ? ☐
10. (a) Indicate by a tick mark (√) against the region you consider your home district

Region	Home district	Region	Home district
Arusha	☐	Lindi	☐
Coast	☐	Mara	☐
Dodoma	☐	Mbeya	☐
Iringa	☐	Rukwa	☐
Kigoma	☐	Dar es Salaam	☐
Kilimanjaro	☐	Morogoro	☐
Mtwara	☐	Singida	☐
Mwanza	☐	Tabora	☐
Ruvuma	☐	Tanga	☐
Shinyanga	☐	Zanzibar & Pemba	☐

(b) Your permanent residence is in an Urban area ☐
Rural area ☐

11. Are you a Tanzanian citizen ? Yes ☐ No ☐

12. When you completed your secondary school education, you wanted to be :

Natural Scientist	☐	Business man & Manager	☐
Engineer	☐	Agriculturist	☐
Social Scientist	☐	Lawyer	☐
Humanistic professional	☐	Other	☐
Health professional	☐	(specify)	

(A list of the fields leading to each profession is enclosed in the end)

13. (a) Did you get any information on career possibilities before you applied for higher education ? Yes ☐ No ☐

(b) You got it from :

Central Establishment office	☐	Other students	☐
Staff of educational institutions	☐	Previous employment you had in the field	☐
Friends, parents or relatives	☐		
Career master	☐	General information sources, books, newspapers, etc.	☐

14. Was the advice : Very satisfactory ☐
Satisfactory ☐
Not satisfactory ☐

15. Name of the course of degree which you are doing : _____

16. How many years have you been studying on your present course ? ☐☐

17. Tick the Institution you are now attending :

University of Dar es Salaam	☐
Dar es Salaam College of National Education	☐
Iringa College of National Education	☐
Technical College Dar es Salaam	☐
Institute of Development Management	☐
Fisheries Institute Dar es Salaam	☐
Institute of Finance Management	☐
Olmotonyi Institute of Forestry	☐
Institute of Land Survey	☐

18. If you are a university student, your faculty is : Law ☐
Arts ☐ Science ☐ Agriculture ☐ Engineering ☐ Medicine ☐

19. Why did you undertake post-secondary study/training ? (tick one)

Wanted specific professional qualification	☐
Bursary incentives	☐
Desire for more study for its own sake	☐
Better employment opportunities for qualified professionals	☐
Tomake yourself available for manpower needs	☐

20. Was your present course of study your first choice ? Yes ☐ No ☐

21. Do you like the course you are now doing ?

Much ☐ Reasonably ☐ Not at all ☐

22. If you have changed your field of study during your education, indicate the SINGLE most important reason for the most recent change

I did not have enough money ☐

My family wanted me to do something else ☐

I later got better information on career possibilities ☐

Someone in my family died, my family moved, etc. ☐

My grades were not good enough ☐

I did not like what I was doing ☐

Another reason (specify) _____ ☐

23. Do you think that your secondary school course was adequate background for your present course of study ? Yes ☐ No ☐

24. Are you employed ?

Full-time ☐ Part-time ☐ In the vacations ☐

25. Approximately, how much do you earn per year ? (do not include your bursary)

Shs _____

26. What is the major source of finance for your present education ?

Government bursary ☐ Family ☐

Non-government bursary ☐ Own efforts (employment, savings) ☐

27. Are you a boarding student ? Yes ☐ No ☐

28. When you have completed your education do you intend to seek employment in your major field of study ?

Yes, permanently ☐ Yes, but not permanently ☐ No ☐

29. If you do not expect to be permanently employed in your present major field, why do you remain in this field ?

The field gives me good career preparation ☐

I enjoy the field ☐

The field gives me a wider choice of future careers ☐

It was a mistake to choose this field, but it is too late to change ☐

I am bonded to the field ☐

30. If you entered direct employment after secondary school education, how much do you think you would be earning ? (salary per month before deductions)

Less than Shs. 250 ☐ Shs. 250 - 500 ☐ Shs. 500 - 750 ☐

Shs. 750 - 1,000 ☐ More than Shs. 1,000 ☐

31. Your guardian is :

Your father ☐ mother ☐ another relative ☐ none ☐

32. Your guardian's occupation is : (tick one)

Professional, technical and related ☐
Administrative and managerial ☐
Clerical and related ☐
Sales work ☐
Service work ☐
Agricultural, animal husbandry, forestry, fishery ☐
Production and related ☐
Unemployed ☐
Not classifiable ☐

(Please consult the occupational classification list in Annexe II for identification of the exact occupation)

33. What is the highest level of education which your parents have ? (tick the correct box)

	Mother	Father
None	☐	☐
St. IV or less	☐	☐
St. VIII or less	☐	☐
Form IV or less	☐	☐
Form VI or less	☐	☐
Post-secondary	☐	☐
Post-graduate	☐	☐

34. What is your guardian's approximate monthly income (before deductions) ?

Less than Shs. 250 ☐ Shs. 250 - 500 ☐ Shs. 500 -750 ☐
Shs. 750 - 1,000 ☐ More than Shs. 1,000 ☐

35. Should your Institution take any interest in the employment possibilities of its graduates ?

Yes ☐ No ☐ No opinion ☐

36. Does your Institution seek the cooperation of government, industry and business in getting specialists to inform students about careers and employment opportunities ?

Yes ☐ No ☐ No opinion ☐

37. If more detailed occupational guidance had been made available to you, would you have been willing to change your field of study ?

Yes ☐ No ☐ No opinion ☐

38. The following list gives four ways of obtaining better knowledge on conditions of work, promotion prospects, etc. Please rank them in order of preference (1 = most preferred ; 4 = least preferred)

Practical job experience during a study course ☐
Personally getting information from prospective employers ☐
Reading careers publications ☐
Discussing with workers from particular fields ☐

39. To what extent will choice of career depend on success in your present studies ?

Much ☐ Reasonably ☐ Not at all ☐

40. In what sector do you expect to be permanently employed when you have completed your course ?

Government service ☐ Private sector ☐

Parastatal ☐ Self employed ☐

41. What factors might induce you to work in rural areas (Please indicate how important you think each of these factors is)

	Very important	Important	Not important
Financial incentives	☐	☐	☐
Promotion prospects	☐	☐	☐
A post of greater responsibility	☐	☐	☐
Opportunity for a free life	☐	☐	☐
Another reason : _____	☐	☐	☐

42. Which of the following factors would discourage you from taking a job in the rural areas (Please indicate the importance of each of these factors)

	Very important	Important	Not important
Lack of tap-water, electricity, etc.	☐	☐	☐
Communication and transportation difficulties	☐	☐	☐
Separation from friends and relatives	☐	☐	☐
Belief that rural life is dull and slow	☐	☐	☐
No scope for improving competence	☐	☐	☐
Possible delays in promotion	☐	☐	☐
Others : _____	☐	☐	☐

43. What do you expect to be earning per month when you have finished your course, before deductions ?

At the start of your career Shs. ☐_____☐

After about five years Shs. ☐_____☐

After about ten years Shs. ☐_____☐

Near retirement Shs. ☐_____☐

44. How important do you think each of the following factors is

(1) towards making a job satisfactory, and

(2) towards meeting career objectives

	Towards making a job satisfactory (1)			Towards meeting career objectives (2)		
	Very imp.	Imp.	Not imp.	Very imp.	Imp.	Not imp.
Interesting work	☐	☐	☐	☐	☐	☐
Use of special talent	☐	☐	☐	☐	☐	☐
Creative work	☐	☐	☐	☐	☐	☐
No supervision	☐	☐	☐	☐	☐	☐
Further studies	☐	☐	☐	☐	☐	☐
Improve competence	☐	☐	☐	☐	☐	☐
Helpful to others and society	☐	☐	☐	☐	☐	☐
Work with people	☐	☐	☐	☐	☐	☐
Good income	☐	☐	☐	☐	☐	☐
Travel	☐	☐	☐	☐	☐	☐
Supervise others	☐	☐	☐	☐	☐	☐
Better prospects	☐	☐	☐	☐	☐	☐
Secure future	☐	☐	☐	☐	☐	☐
Time for family and hobbies	☐	☐	☐	☐	☐	☐
Use of skill learned in formal schooling	☐	☐	☐	☐	☐	☐

45. I hereby declare that the information contained in this questionnaire is complete and correct to the best of knowledge and belief.

Signed : _____

Date : _____

ANNEX I

List of subjects under different fields of study :

Natural Science :	Biological Science
	Premedicine
	Chemistry
	Earth Science
	Physics
	Other physical sciences
	Mathematics
Engineering :	Chemical
	Civil
	Electrical
	Industrial
	Mechanical
	Mining
Social Science :	Economics including Home Economics
	History
	Political Science
	Psychology
	Sociology and anthropology
	Geography
Humanities and Arts :	
	Swahili
	English and Journalism
	Fine Arts
	Foreign language
	Philosophy
	Religion
Health :	Pharmacy (nursing for women)
	Medicine
Administration :	Management Science
	Business Administration
	Civil Service Training

ANNEX II

OCCUPATIONAL CLASSIFICATION LIST

Occupational Area

Unemployed Worker

Professional Technical and Related Workers
Physical scientists and related workers
Architects, engineers and related workers
Aircraft and ships' officers
Life scientists and related technicians
Medical, dental, veterinary and related technicians
Statisticians, mathematicians, systems analysts and related technicians
Economists
Accountants
Jurists, lawyers, judges
Teachers
Workers in religion (Ministers of religion)
Authors, journalists and related workers
Sculptors, painters, photographers and related creative artists
Composers and performing artists
Athletes, Sportsmen and related workers
Professional, technical and related workers not classified elsewhere

Administrative and Managerial Workers
Legislative officials and Government administrators
Managers
Government executive officials

Clerical and Related Workers
Clerical supervisors
Stenographers, typists and card- and tape-punching machine operators
Bookkeepers, cashiers and related workers
Computing machine operators
Transport and communications supervisors
Transport conductors
Mail distribution clerks
Telephone and telegraph operators
Clerical and related workers not elsewhere classified

Sales Workers
Sales supervisors, technical salesmen, manufacturing agents, shop assistants etc.

Service Workers
Cooks, domestic servants, waiters, bartenders, cleaners, hairdressers etc.

Agricultural, animal husbandry, forestry workers and fishermen
Farm workers, forestry workers, charcoal burners fishermen etc.

Production and related workers, transport equipment operators and labourers
Production supervisors and general foremen, miners tailors, machine tool operators, broadcasting station operators, cinema projectionists, plumbers, printers, photographers, painters, bricklayers, carpenters, construction workers, equipment operators, freight handlers, transport equipment operators, etc.

Undergoing further training

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OCCASIONAL PAPER No.62. The complexity of the relationship between education and employment has created considerable interest among educational planners in recent years. The IIEP has launched a number of studies in different countries around the world to explore this relationship between higher education and employment. The present paper gives the conceptual framework of the research, broad outlines of the methodology adopted, and the organization of the research in various countries.

BIKAS C. SANYAL has been a staff member of the IIEP since 1969 and is responsible for the research project on higher education and employment. From 1960 to 1966 he organized and administered a Residential Honours College in India, and was a member of the Faculty of Iowa State University, USA, from 1966 to 1969. He is co-author of Higher education and employment in the Sudan (1975), and similar studies on Zambia (1976), Tanzania (1977), Poland (1978), the Philippines (1981), and the Federal Republic of Germany (1982). Studies on Egypt, West Bengal - India, and Bangladesh are to be published shortly.